

## ABSTRACT

Title of Document: BALLANCING ON TRANSIT:  
REDEVELOPMENT OF THE SOUTHERN  
PACIFIC RAILYARDS  
SACRAMENTO, CALIFORNIA.

Anthony Paul Fusco, M. Arch 1, 2005

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This project proposes an urban design strategy for the North End of downtown Sacramento, California; the culmination of which is the design for a new intermodal transit facility.

The intention is to recapture development into downtown by reclaiming the former Southern Pacific Railyard site, and propose a formal and programmatic development strategy allowing Sacramento to balance downtown growth through renewed connections into its North End.

Conceptually this occurs at three scales: City, District, and Architectural, represented by the three scales of site. The entire *240 acre rail yard site* will balance growth at the scale of downtown; the smaller *45 acre transit district* will balance growth between the central business district and a new activity district in the North End; and finally the *transit facility* will itself act as a bridge across the tracks allowing for direct communication between the new and the old city fabrics.

BALANCING ON TRANSIT  
REDEVELOPMENT OF THE SOUTHERN PACIFIC RAILYARDS  
SACRAMENTO, CALIFORNIA.

By

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Thesis submitted to the Faculty of the Graduate School of the  
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## Dedication

This document is dedicated to the hard working individuals who filled the Sacramento swamps and erected a complex of structures that can only amaze those who walk through them. I for one have been impressed by their stoic presence, which will hopefully not be forgotten in the glamour and controversy involved when times bring change and anticipation. Even as the city will build up around them, they will still stand strong and alone in my mind as I remember a summer spent climbing in their trusses and measuring their spans. It is not for me that this document exists. It is for them, and all who will be inspired by them to do things greater than themselves.

## Acknowledgements

It is important to remember the people who carry us on their shoulders in order that we may achieve the desires of our hearts. I would like to first thank God for his unending grace that has provided me with hope in my salvation and a knowledge that he knows the plans he has for me [Jeremiah 29:11] and that despite the struggle all things work to good for those who love the Lord [Romans 8:26].

I would like to thank my parents for allowing me to pursue a desire and not allowing me to fall during the times when it seemed impossible to succeed. I would like to recognize my brother Mario, who never doubted my ability to trace things and draw straight lines despite his skepticism as to what I was actually doing for 18 hours a day in the studio. I would like to thank the Fountains, the Chris', the Thursday night Small Group guys, and the Sunday night Bible Study whose prayers for my success in the final days were the only thing that carried me through the uncertainty of the times. The Chris' threats on my life if I did not graduate were also an inspiration to persevere and run the good race. Finally, to Jen and Mary Jane whose rally at the end was the motivation that allowed me to finish strong. Thank you all. This was a miracle and I could not have done it alone.

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## Introduction:

Seen from the air, Sacramento's north end looks something like a mushroom cap, growing up asymmetrically out of downtown's orderly grid. The city's disciplined rows of tree-lined streets and office buildings shift abruptly to [a] jumble of warehouses and vacant lots. The whole north end seems glommed on and not a part of the city proper. From the ground, this area...is mostly invisible to Sacramentans as they go about their daily lives. Separated by railroad tracks and earthen berms, and a vague sense there just is no reason to go there, it has a blind spot on the city map most of us carry in our heads...

--Cosmo Garvin: Sacramento News and Review, January 08, 2004

Garvin's description is a response to the recent availability of lands at the north of Sacramento's downtown—specifically the Southern Pacific Railyards [SPRY]. For over 150 years this area was occupied by the Railroad and the mega-scale industrial infrastructure it encouraged. Formerly the hub for the Southern Pacific's manufacturing and maintenance of rolling stock, the railyards were an entity the city was forced to develop around. All but abandoned, the site is now a vacuum for ideas on redevelopment and revitalization. The Union Pacific [UP] purchased the Southern Pacific [SP] in the mid 1990's, and began the process of closing the Shops—officially closing in 1999. Talks of sale and redevelopment began; however, the site's designation by the California State Environmental Protection Agency (CaEPA) as a state Superfund complicates and delays this process. Currently, the city awaits development proposals from Millennia Development, the primary candidate for purchase of the site from the UP.



**Figure 1: Aerial Photograph of Downtown Sacramento<sup>a</sup>**

<sup>a</sup> Image courtesy City of Sacramento, Economic Development Department

Returning to Garvin's remarks, it is clear from the aerial photo [Figure 1], this site, which housed an industry almost solely responsible for the existence of Sacramento, sits as an anomaly or curiosity in today's landscape. Due to the nature of operations in this area of the city, development historically occurred away from the site, or across the American River, well north of the Downtown. Limited or no access to the site meant no need for public infrastructure. Consequently, when the Railroad was removed, a void, roughly equal in size to the central business district [CBD], was left along with a failing industrial zone blocking access to the American River and operating at a scale of urbanism much different than the downtown.

The availability of this property opens the eyes of Sacramento to an aspect of the city most residents have never had contact with, and now it and its remaining structures, must be integrated into a mature, urban fabric. Issues of scale and novelty at social, economic, and physical scales consume the discussion, with concepts such as, revitalization, sustainability, and smart growth coming very much to a point in this site. This site has the opportunity to implement many contemporary models of growth management, and become itself a model for urban generation that looks seriously at the future of the emerging "Regional City"<sup>b</sup> of the 21<sup>st</sup> Century.

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<sup>b</sup> Calthorpe and Fulton. *The Regional City: Planning for the End of Sprawl*. Washington, DC: Island Press, 2001

My own personal introduction to the site came through an internship with the HAER department of the National Park Service documenting the historic shop structures on the site for the records of the Library of Congress. While on site I became aware of the planning process the Railyards were undergoing, and began following the reports and proposals being entertained by the city. Generally dissatisfied by the quality of urbanism put forth by the published proposals, the desire to elaborate my own opinions and theories continued to grow, and manifested itself in the adoption of this project as a master's thesis. More than a reaction to a particular series of proposals, however, *this is a search to recognize the role of overlapping scales and how to then unite these scales through systems of circulation.*

While researching the site and its relationship to the downtown it became evident that in order to redevelop and integrate the Railyards successfully into the city the project must seek resolution at three distinct scales of intervention:

1. Urban [City]
2. District [Neighborhood]
3. Architectural [Building]

Linking these scales back to the article by Garvin, which describes the site and the North End as being absent from the mental map of the city's residents, we can attribute certain roles to these three scales that make them essential in planning for the redevelopment of the Railyards and this "mushroom cap" known as the North End.

Firstly, *the urban scale is responsible for providing connections between imageable or known places and spaces*. If the Richards Boulevard Area [RBA] and the Southern Pacific Railyards are not on the map or are not a recognizable destination, they cannot be connected into the cultural fabric of a city despite connections into the urban fabric. So, briefly, the urban scale provides for the directing, collecting, and orienting of people and uses within a city.

Secondly, *the district scale is responsible for providing a sense of place, or what might be stated as an attitude or atmosphere*. The Railyards are equal in size and adjacent to the Central Business District [CBD], the Alkali Flats Neighborhood and, northern Midtown. These places represent different ideas within the city, and have been classified as such. The Railyards will require an attitude within the city that makes it distinct and imageable—people should want to invest in this place. If people desire to get there and utilize this place, the urban scale will then provide the connections into that place.

Thirdly, *the architectural scale is responsible for providing a sense of space, which might be synonymous with enclosure*. If this enclosure is exterior it is a plaza, logia, alley, etc. If this enclosure is interior, it is a hall, library, office etc. It can also be seen as the termination of the promenade which exists at all three scales. The narrative progresses from movement to arrival to entry. These are the components that work together either monumentally or ephemerally to create the district identity.

This document takes the stance that in order to successfully integrate the North End with the mature social and urban fabrics of the downtown, development must:

1. Create a system(s) that maps the city and allows for ease of communication between the two sectors—connections.
2. Create an imageable place in the city that can be reached within the context of the system created above—identity.
3. Create an architecture that reinforces an attitude and systems of arrival to provide points of belonging and entry—threshold.

Accomplishing this requires a system that links all three scales. This system must be abstract enough to meet the demands of the urban intervention, and yet concrete enough to be translatable into a discrete structure with a function(s). Chosen for this is the narrative of promenade or journey. Alluded to above, the promenade relies on all three scales to achieve its goal and produce meaning. In researching the site, it became evident that the Railyards had the potential to become the nexus for three primary circulation systems which are: automobile; park/ pedestrian; and mass transit.

While not surprising, it was found that the composite, or overlap, of these three systems yielded insight into a fourth system of organization—activity nodes and corridors. With that, it can be inferred that when the three systems of circulation are resolved at all three scales, the desired measure of activity will follow. Stated inversely, when a level of activity is desired either in a particular place or along a path, it is advantageous to overlap these three systems. Therefore, *this project is a reaction to apparent deficiencies in these areas as the site currently exists and in the*



*current proposals by the city of Sacramento.* It then stands on the idea that if development and integration is to work in the North End, the Southern Pacific Railyards are going to be the fulcrum on which the city is to *balance* its future growth, and must be planned accordingly regarding the sites role at all three scales of intervention and in relationship to all three systems of movement through the city. Consequently, the focus of this project is to propose an intervention that creates a network of movement systems through the site at all three scales and then uses the proposed transit center as the architectural intervention to carry the urban principles into and through the structure in such that the scales are linked in the following diagram:

Architecture creates threshold between new and old/ mode and mode

Transit District mediates between two tangential districts

Railyards Site correlates two systems of urban organization

## Chapter 1: Site

### Context:

#### Geographic

The location of these interventions is in downtown Sacramento, California, and specifically on the site of the former Southern Pacific Railyards. Sacramento is located in Northern California, in the Sacramento Valley [also the Great Valley Province<sup>c</sup>] at the confluence of the Sacramento and American Rivers. It is approximately 80 miles northeast of San Francisco and the Bay Area, at the junction of I-5 and CA 99, north south, and I-80 and US 50, east west. It is the state capitol as well as the seat of government for the county. Regionally it is the economic and urban center for seven counties including its own Sacramento County.

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<sup>c</sup> City of Sacramento Department of Public Works [WP#8], p.

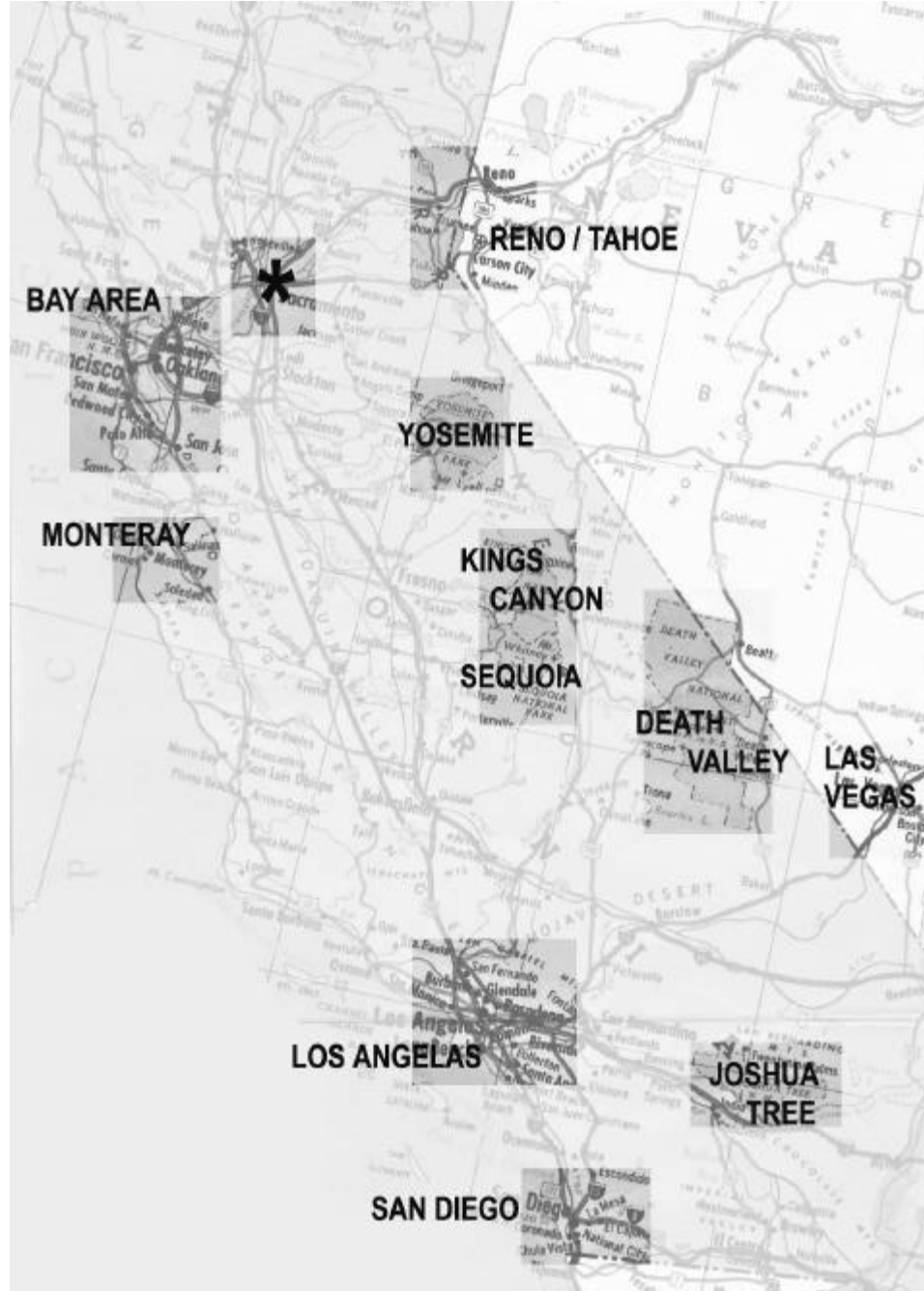
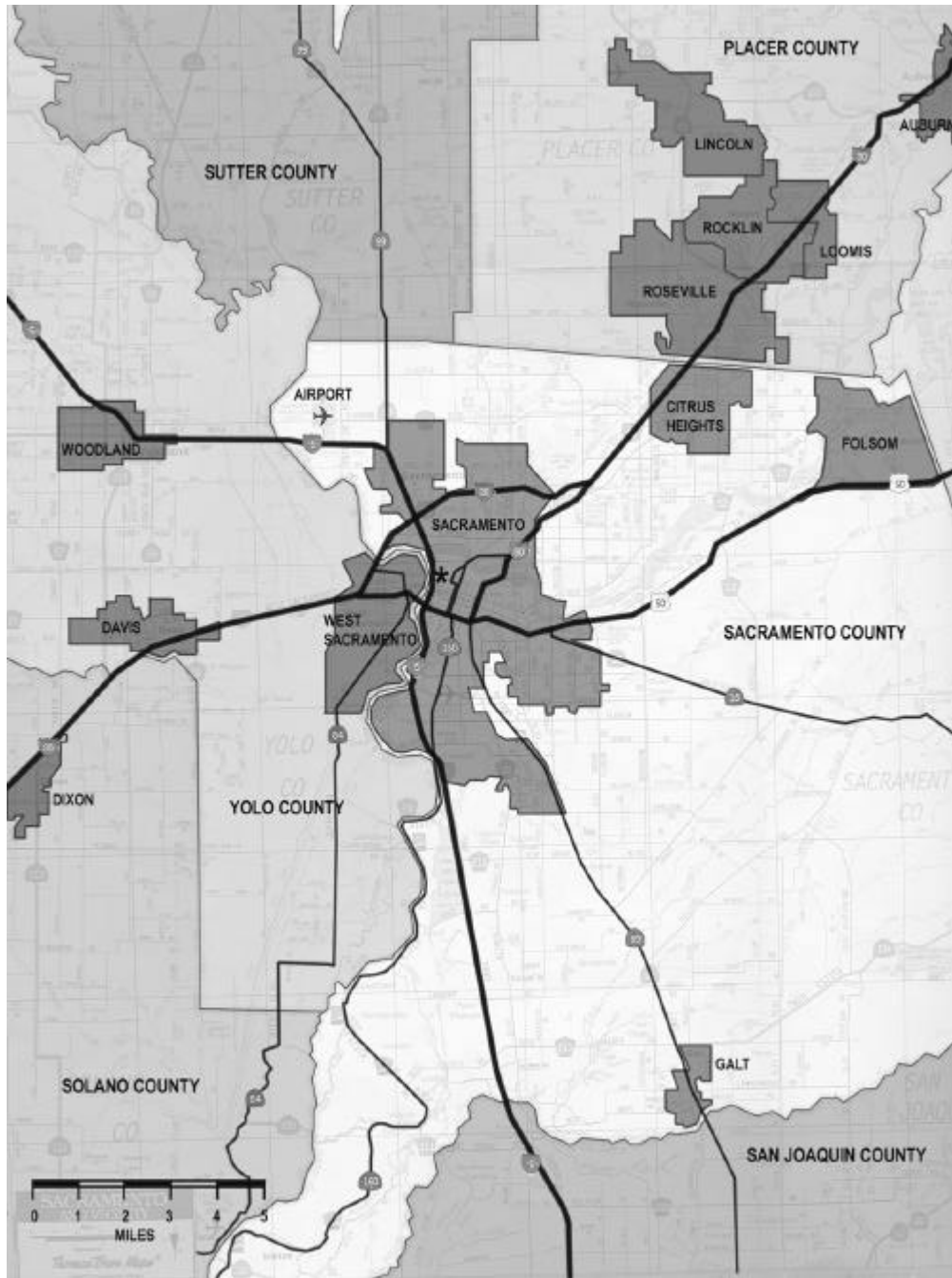


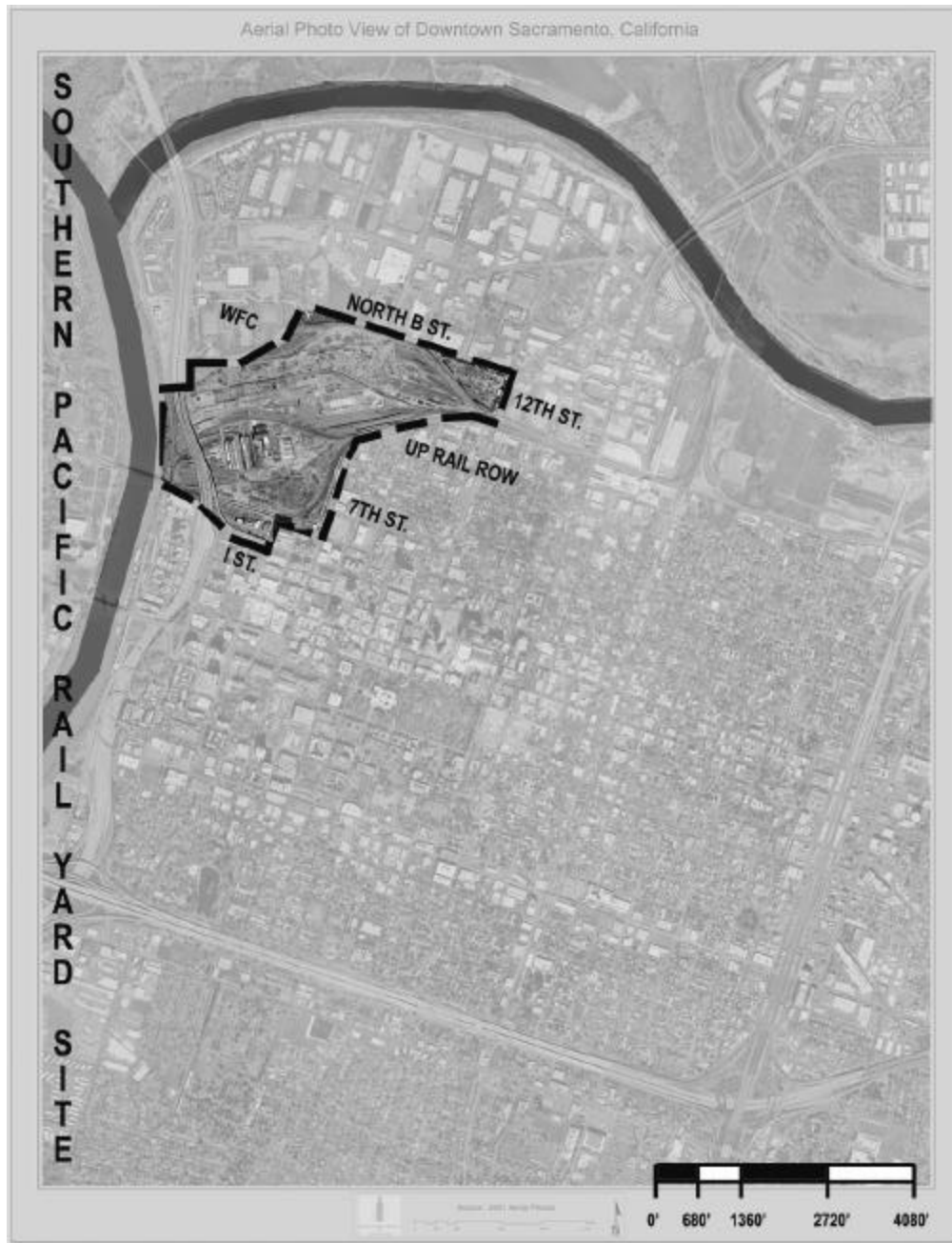
Figure 2: Sacramento--California Context



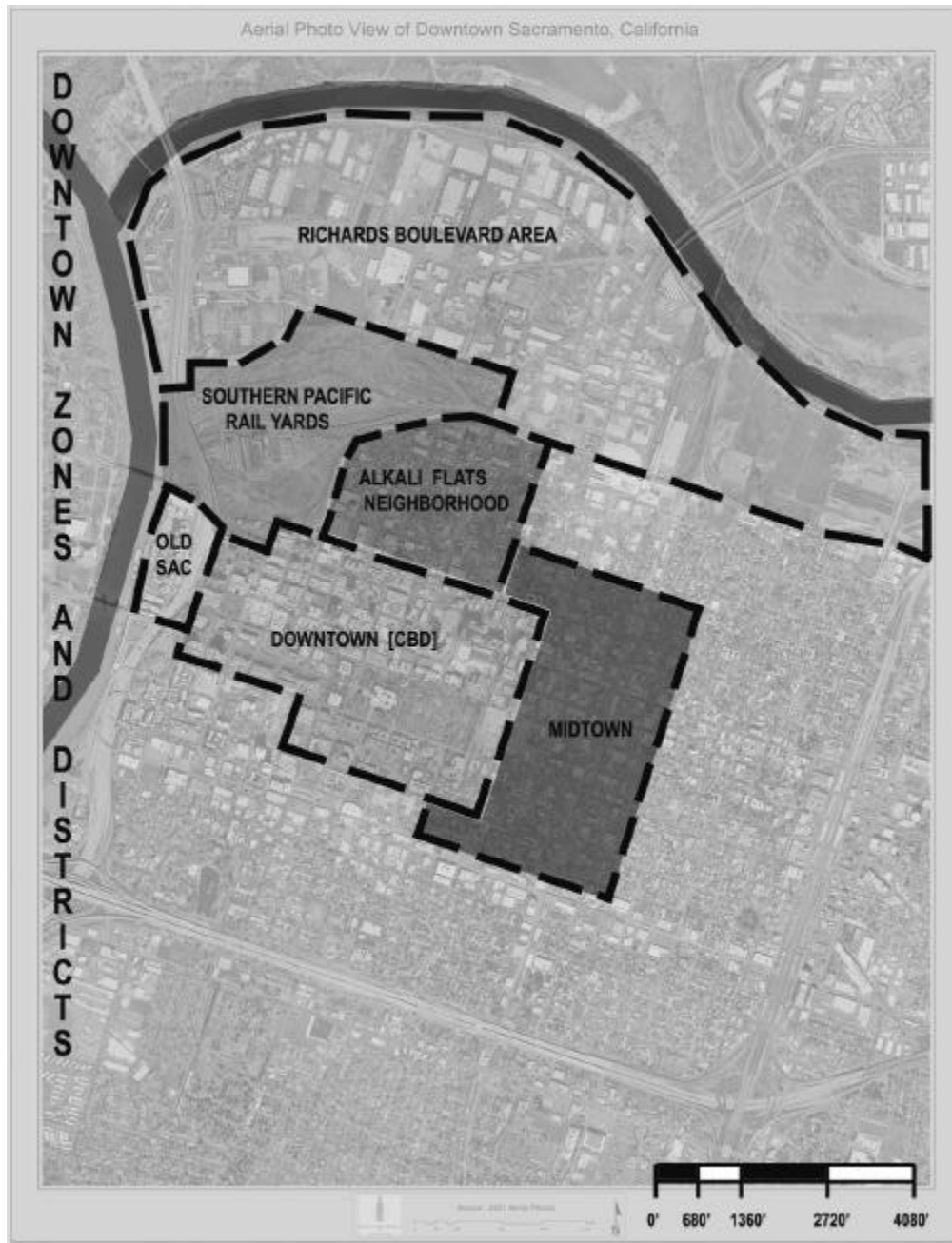
**Figure 3: Sacramento--Regional Conext**

The Southern Pacific Railyards Site [SPRY] is a 240 acre swatch of land located in the downtown, at the northern edge of the Central Business District [CBD] and Old Sacramento [Old Sac]. It along with the Richards Boulevard Area comprises

what is known as Sacramento's North End, an evolving post industrial area of approximately 1250 acres. It is adjacent to the Sacramento River on the west and is just south of the confluence of the two rivers. The site is also crossed by I-5 just east of the Sacramento River.



**Figure 4: Southern Pacific Railyards Site Location**



**Figure 5: Downtown Zones and Districts**

The proposed area of intervention for the intermodal transit facility is the triangular piece of property bound by the historic shops on the North, the Historic

Depot on the South and 7<sup>th</sup> Street to the East. This portion of land is approximately 45 acres and is included in the 240 acres of the SPRY.



**Figure 6: Transit District Site Location**

## Political

### Land Use:

Growth of the Southern Pacific led to a rise in associated industrial and manufacturing and goods transportation services between itself and the American River to the North. As the railroad began slowing as a primary means of transportation so did this associated industry. While much of the North end retains its heavy commercial/ industrial zoning designation, much of those types of industries have since left leaving mainly warehousing and low to medium industrial and manufacturing businesses. Interspersed within this declining industrial landscape are two 1940's public housing projects and two food processing plants. The housing, an elementary school, and a newer social services campus seem almost random and insignificant in scale to the mass of the North End.

Much of the activity surrounding the site takes place to the South in the Central Business District, Alkali Flats and Midtown, which are all Mixed Use residential and commercial designations.

The SPRY themselves have been officially closed since 1999. However, the Depot still functions as an Amtrak Station—primarily for commuter rail—and two of the remaining shops are being used by the California State Railroad Museum (CSRM) for storage and restoration of museum rolling stock.





**Figure 7: Current Land Uses Surrounding Site**

### Historic Structures

There are ten structures that remain standing on the site. Figure 8 below locates and names these remaining structures. The Boiler shop and the Erecting shop are the only two structures which have been able to remain in some type of use since the closure of the Shops in 1999. Currently these two structures are being utilized by the California State Railroad Museum [located adjacent to the site, Figure 9] for the purposes of storing and refurbishing collections of rolling stock. The historic 1929 Depot and REA Building are also on the site. All of these structures are registered either by the state or city as historic landmarks and the shops were recently documented by the National Park Service for the purpose of recording with the

Library of Congress. Because of their registered status they are to be planned for in any future uses on the Railyards site. This was already the intention of the intervention.

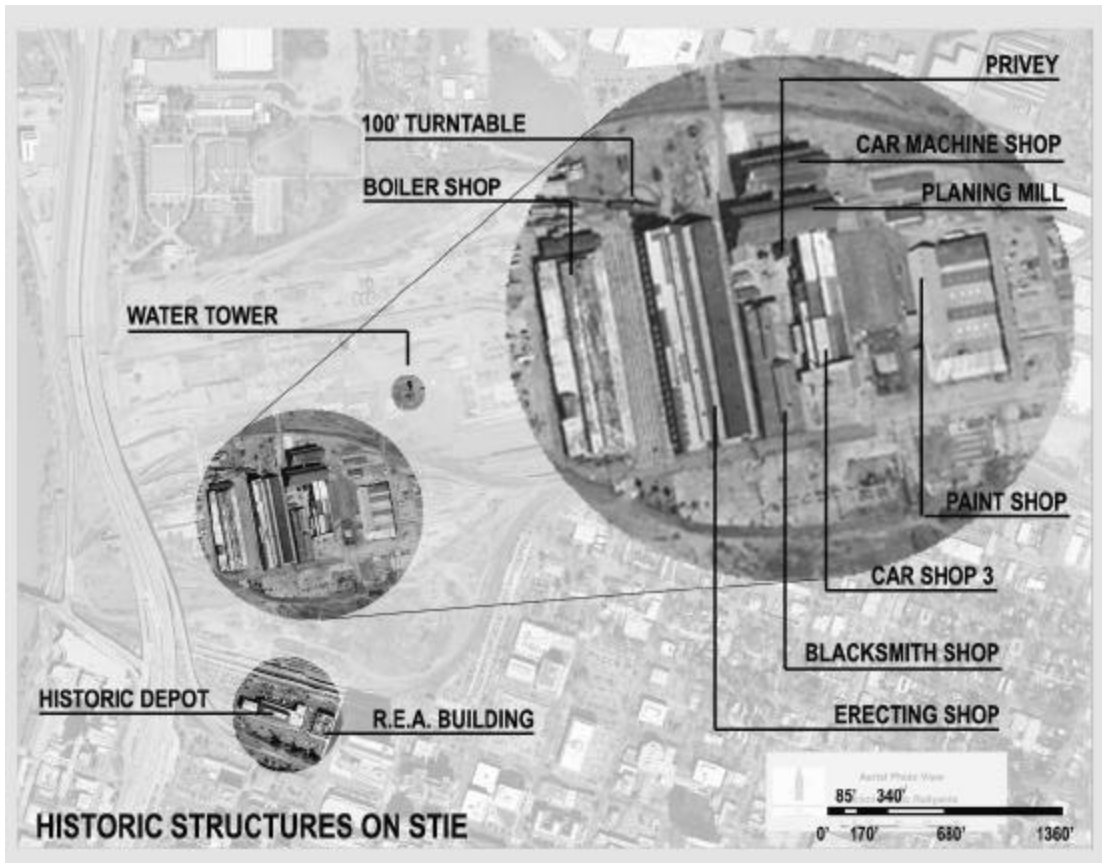
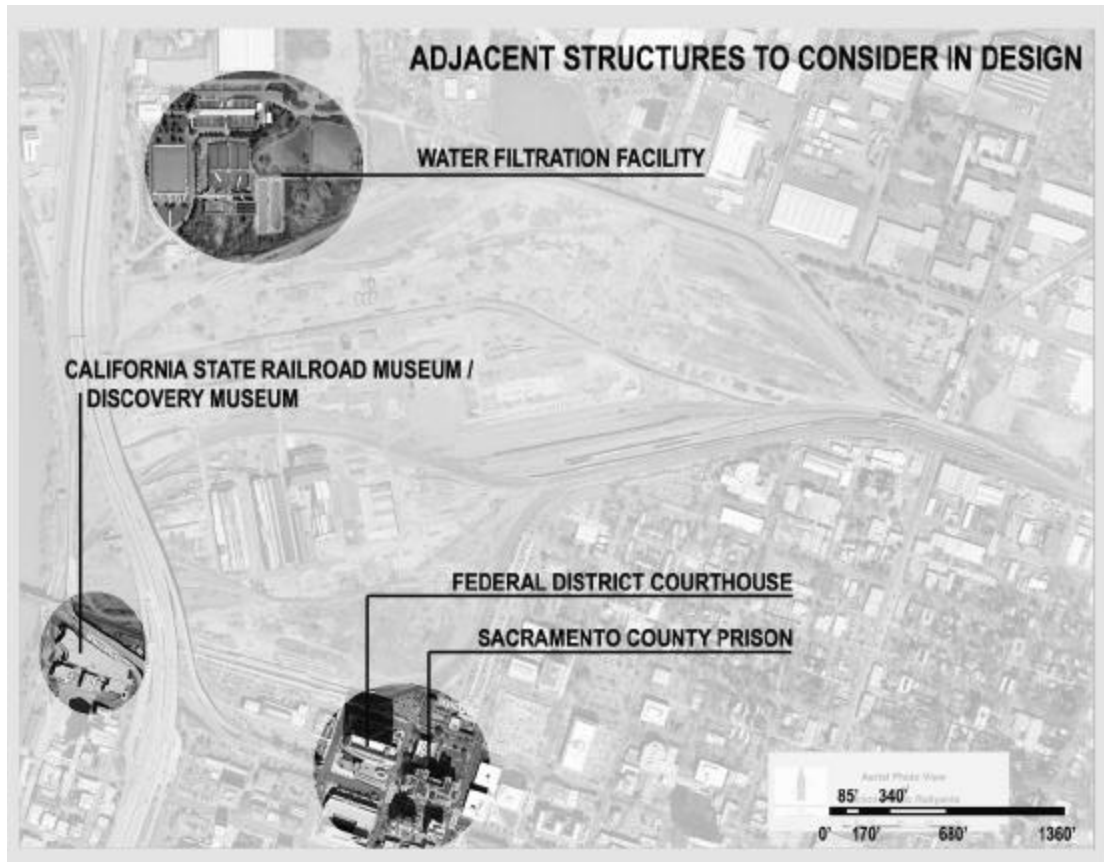


Figure 8: Historic Structures on Site

### Adjacencies

Important adjacencies to consider when planning the site, whether in terms of use, views or movement corridors are the structures shown on the diagram below. These are the California State Railroad Museum just west of the I-5 overpass; the Federal District Courthouse and County Prison east of the Historic Depot; and the Water Filtration Facility located at the Northwest corner of the site.



**Figure 9: Adjacent Structures to Consider in Design**

### *Roles*

Garvin’s article describes an area of the city that, despite its integral role in constructing the city of Sacramento, has taken on a quality of otherness and forgottenness in the collective mind of the city. As such in order to truly re-integrate it into not only the urban but also the cultural fabric of a place it must become something identifiable and recognizable. This means critically examining the role Sacramento, specifically this site, has had historically and how that can begin to influence its future.

## Historic

Sacramento's place in time was established in 1848 when John Sutter discovered gold in the foothills of the Sierra Nevada Mountains near Sutter's Creek, approximately 100 miles to the southeast of downtown. The city's position along the navigable Sacramento River enabled the city to take on the *role of inland port*. This allowed for safer and faster passage of goods and people between San Francisco and the Sacramento Valley.

The Central Pacific [CP—later Southern Pacific] constructed its first shops in 1863 and it would be from Sacramento that the CP would begin its push to Utah in the completion of the first Transcontinental Railroad. At the time all locomotive parts were manufactured on the east coast and shipped to California. Sacramento's role as inland port allowed passage of these goods to come directly inland, bypassing San Francisco and the still infant and fragmented rail system of the West. The completion of the Transcontinental Railroad in 1869 confirmed both the prominence of the Southern Pacific in the West and the *role of Sacramento as its "headquarters"*.

The siting of the Shops was north of the city, between Sutter's Lake and an earlier alignment of the American River. The Lake was marshy overflow from the two rivers and occupied what is now the proposed site for the new transit facility. The process of filling the lake began shortly after the shops opened and was completed in the 1920's.



Figure 10: Historic River Alignment and City Plan



**Figure 11: Historic Aerial Rendering Showing Sutter's Lake<sup>d</sup>**



**Figure 12: Historic Photo of Shops Across Sutter's Lake<sup>e</sup>**

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<sup>d</sup> Photo Courtesy California State Railroad Museum

<sup>e</sup> Photo Courtesy California State Railroad Museum





**Figure 13: Historic Photo of Shops Showing Landscaping<sup>f</sup>**

Ultimately the Shops grew to a physical size of 240 Acres, with nearly 100 buildings and employing nearly 5000 during its World War II peak. By this time, nearly all processes for the manufacture of rolling stock took place on site, by railroad employees, from casting of parts to painting and upholstering cars.



**Figure 14: Aerial View of Shops During Post War Prime<sup>g</sup>**

<sup>f</sup> Photo Courtesy California State Railroad Museum

<sup>g</sup> Photo Courtesy California State Railroad Museum and HAER Division National Park Service

Declining passenger and freight rail services after World War II led to continual downsizing of the Shops until their sale to the Union Pacific [UP] in 1997<sup>h</sup>. The UP officially closed the shops in 1999 when it moved the remaining contractors to its maintenance facility in Roseville, CA.<sup>i</sup>

The UP's Desire to sell/develop the site raised issues of soil contamination and consequently the site was declared a California State Superfund Site. This designation carries with it an estimated 20-year decontamination calendar for the entire 240 Acres. Mentioned above, the remaining structures have been placed on various historic registries and "preserved" through any new development. However, fear of demolition or structural degradation led to their documentation by the Historic American Engineering Record [HAER] from 2001-2002 for the purpose of collection in the Library of Congress<sup>j</sup>. The Historic 1929 passenger depot, which continues to function as an Amtrak station, is also a registered landmark.

#### Present

The site's present is one of uncertainty and ambiguity. Its only residents are a small group of machinists working for the CSRM, a group of engineers working for the EPA and the resident cats and pigeons. As seen from the photographs below the site is rather barren and uninviting, and very much a place where people have no reason to go or desire to go. In many ways it is a forgotten landscape.

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<sup>h</sup> Dougherty, 2002

<sup>i</sup> Dougherty, 2002

<sup>j</sup> This documentation is still in its draft form, and is neither complete nor capable of being reproduced in this document. Drawings of the Shops illustrative only, and may contain errors.





**Figure 15: View of Shops Buildings From the South<sup>k</sup>**



**Figure 16: View Beyond Car Machine Shop to the North<sup>l</sup>**

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<sup>k</sup> Photo courtesy author

<sup>l</sup> Photo courtesy author



**Figure 17: View of Blacksmith Shop<sup>m</sup>**



**Figure 18: View of Boiler Shop<sup>n</sup>**

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<sup>m</sup> Photo Courtesy of HAER Division, National Park Service

<sup>n</sup> Photo Courtesy of HAER Division, National Park Service





**Figure 19: View of Car Shop 3<sup>o</sup>**



**Figure 20: View of Car Shop 3 and Ground Water Treatment Machinery<sup>p</sup>**

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<sup>o</sup> Photo Courtesy of HAER Division, National Park Service

<sup>p</sup> Photo Courtesy of HAER Division, National Park Service

## Future

The void left by the removal of a once integral aspect of the city's identity has allowed a myriad of ideas and interests to arise concerning its future. One interest group led by a local lawyer wants the North End to become an 800 acre natural preserve known as Gold Rush Park. Others envision an ultra-modern, pedestrian-only, urban environment. Certain local residents do not want change, for a fear of disruption to their lives<sup>q</sup>. Within all of this lay the practical needs of the city and region. Sacramento is the economic center of the Sacramento Valley Region and the seat of state and county governments, however, economic activity is being decentralized to suburbs or satellite towns such as Folsom, Auburn, and Davis, leaving downtown's eclectic mix of residents lacking many of the resources a city center typically provides.

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<sup>q</sup> Garvin, 2004



Figure 21: Artist's Rendition of a New North End<sup>r</sup>

<sup>r</sup> Garvin, 2004

The Railyards site exists when a large, unified parcel can generate the interest and focus the resources necessary to create a gateway or core capable of drawing activity and investment back into downtown. The historic Shops buildings are planned to accommodate a new Railroad Technology Museum [RTM] as an extension of the CSRM. This amenity can generate other entertainment and retailing opportunities, and discussion continues on a possible arena for the city's two professional basketball teams on the site [an option this document does not support].

The proposed intermodal transit facility has the potential to be the connector between Downtown and the North End, enabling the city to naturally balance itself, while providing transit and pedestrian accessible options to commuters and residents.

There is opportunity for new park and open space to be designated before property values and future interests make such goals prohibitive. EPA Job Pilot Programs, part of the EPA Brownfield Pilot Programs, can be used to train individuals with necessary skills to work on various projects from new construction to remediation. Such training and funding could make more environmentally conscious remediation efforts and restorative park land more feasible, fostering tangible applications of sustainable urbanism.

Increases in the city's population by 25% [~100,000] over the next 15 years could provide the impetus for more controlled growth within the city and the reintroduction of large residential projects in the Downtown. Translated, roughly 50,000 new residences are expected in the incorporated city—8,000 of these are desired in the Downtown using underdeveloped property [i.e., Railyards]<sup>s</sup>.

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<sup>s</sup> City of Sacramento, Amendments to General Plan, 2003 Section 1-9, Table 4

Current trends of development in the area rely on the damming of the two rivers and the draining of agricultural lands to make way for residential and “big-box”, commercial development. Access to four major highways has created strip commercial development from Sacramento to the foothills. This site has the opportunity to establish new trends in architecture and urbanism that seek to accommodate the needs of both a modern society as well as a modern ecology. Its size and potential impact at urban and regional scales make it an exiting opportunity and a problem that requires considerable scrutiny and forethought.

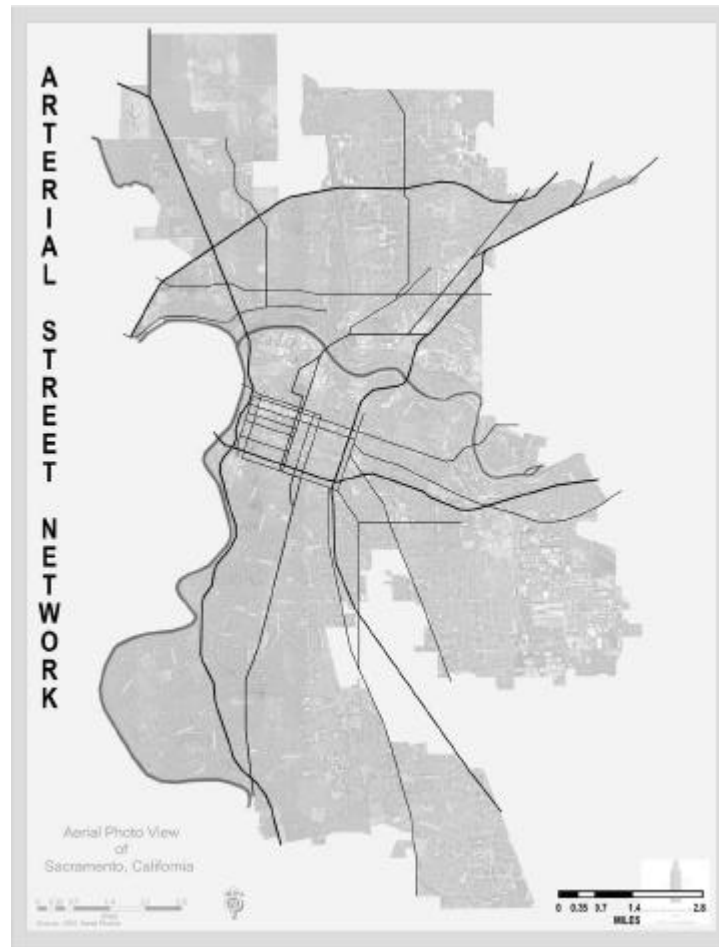
With that, the following section will take a closer look at the three systems mentioned in the previous section and begin to suggest ways in which they can be considered in sponsoring a design solution.

## Chapter 4: Systems Analysis

### Streets and Roads

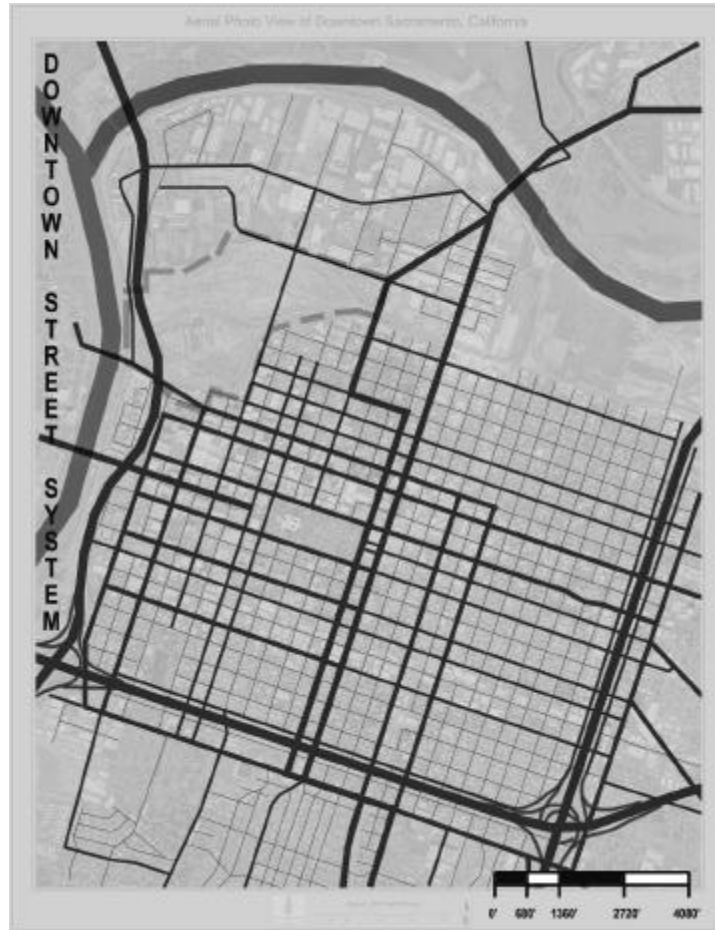
Historically the North End, generally, and the Railyards site, specifically, have had very limited connections into the cities vehicular transportation networks. This is primarily due to its large scale as well as its single, isolating use. Together they prevent the regular increment of streets from passing north south through the site. However, while there are currently few connections through the site, the Railyards are located in close proximity to many primary routes both internal and external to the city. As seen in the Arterial Network Diagram below, the site is bound by two major north south corridors—Interstate 5 on the West and SR 160 (12<sup>th</sup> and 16<sup>th</sup> Sts.) on the East.





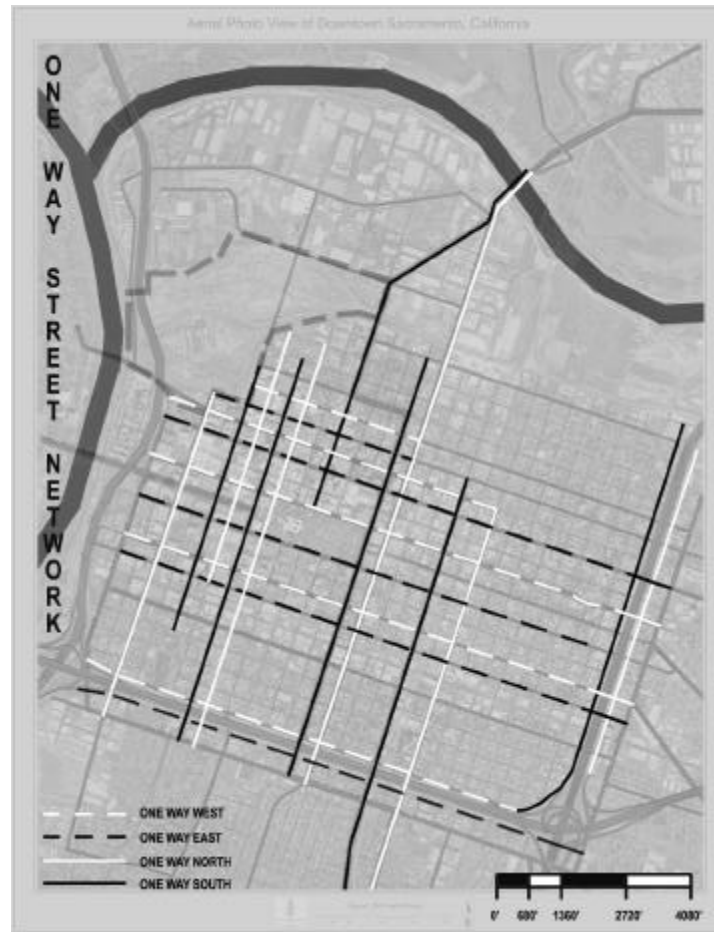
**Figure 22: Arterial Street Networks**

Despite these two peripheral connections, the Downtown Street System diagram demonstrates the relative isolation—both internal and external—the site has in terms of making connections into the existing fabrics, either to the north or south. The sole connection through the middle of the site seen in this diagram is the recent extension of the 7<sup>th</sup> St. ROW that was completed in January of 2004.



**Figure 23: Downtown Street Network**

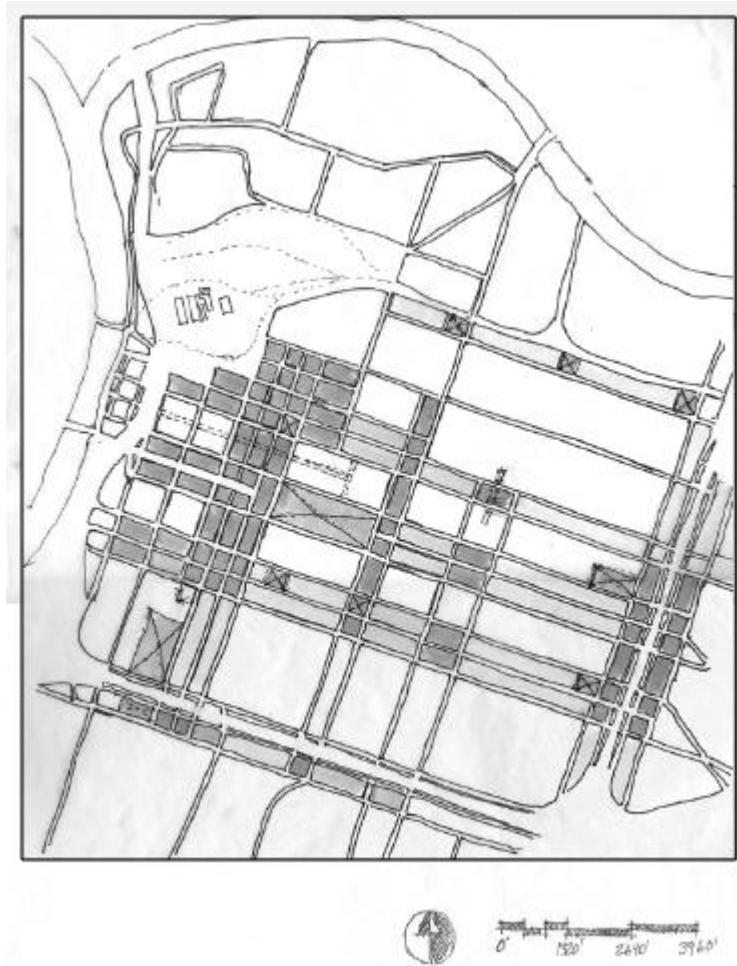
Dynamically, the primary street grid in Sacramento works on a one-way couplet system, as seen in Figure 24. Reinforcing the above comments, it is evident from this diagram how little connection into the North End there is by the primary networks. The system in many ways is blocked by the presence of the rail right of way and the Railyards site.



**Figure 24: One Way Street Network**

From these diagrams can also be extrapolated ideas on scale and intensity patterns that are latent in the problem of this site. First of all it is obvious from the Downtown Street System diagram the discrepancy of scale that exists between the downtown proper and the industrial fabric of the North End. Block and lot sizes are much larger and as such begins a discussion on the need for a system that begins to break down or mediate between the two different scales of urban infrastructure. Secondly, it is evident that the primary direction of concern in the problem is north south communication. The downtown proper already has a mature east west system and the North End appears to have a simple yet fundamental east west corridor, but what truly

lacks is the layer of north south connectors that will liaison between the two halves of the city. It is this layer of connectors that would appear to have the most ability to begin the scale mediation process. Thirdly, if the one way network is abstracted and the correlation of primary, one-way intersections to functional land-use intensity is observed, it yields an intensity image like Figure 25.



**Figure 25: Street-Land Use Intensity**

This diagram begins to demonstrate the clustering of relative use intensities around certain one-way pairs, both north-south and east-west. Through this, two things can be taken. The first is an idea of which north south streets or street pairs are most

appropriate to carry through the site in terms of traffic volume and connections to important locations in the city. This goes back to the earlier discussion on the urban scale's role in mapping and relating identifiable locations within a city. The second tool gained from the diagram is that it provides a pattern of mapping and organizing the city that is already embedded, and so provides a possible template for the organization of new development. While literal translation is probably neither good nor possible it should be seen as a way to begin the dialogue of extending infrastructure into the Railyards and the North End. The following three images begin to look at how this process might begin and how a new grid could take shape.



**Figure 26: Possible North South Extensions**

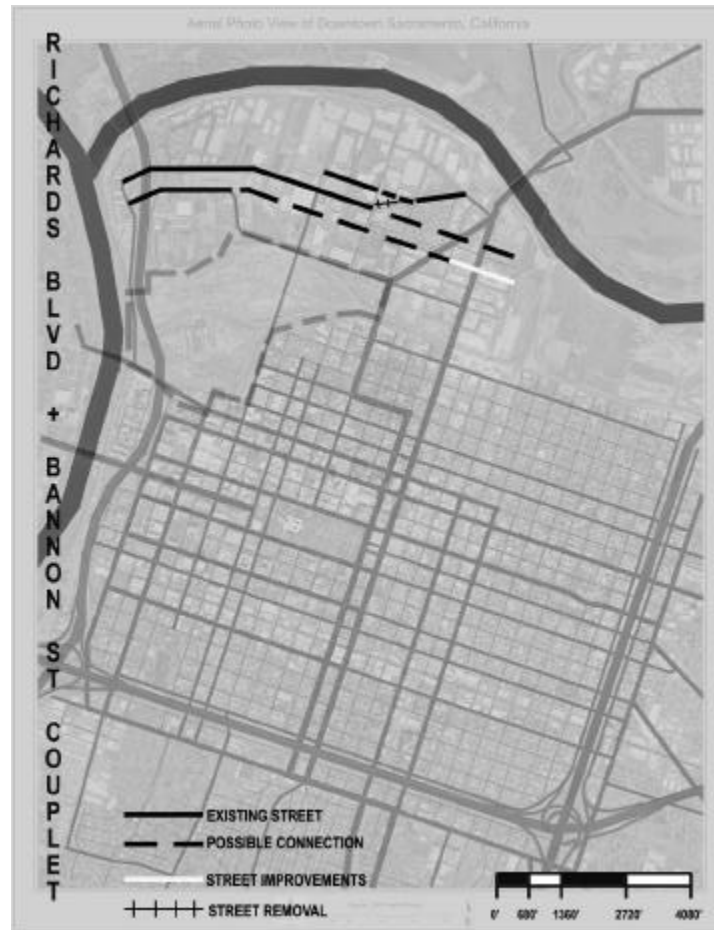
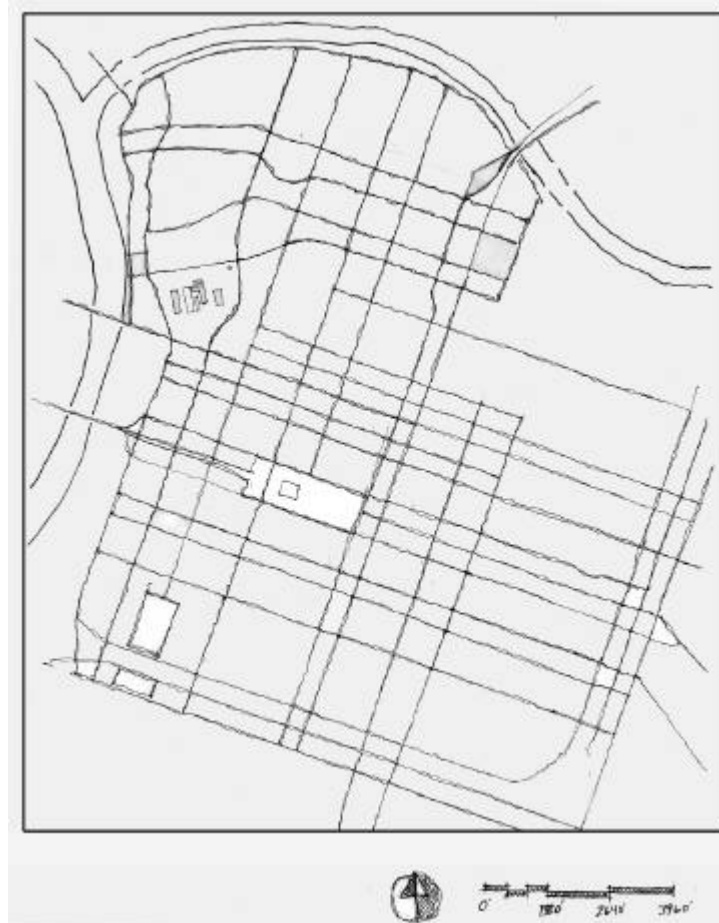


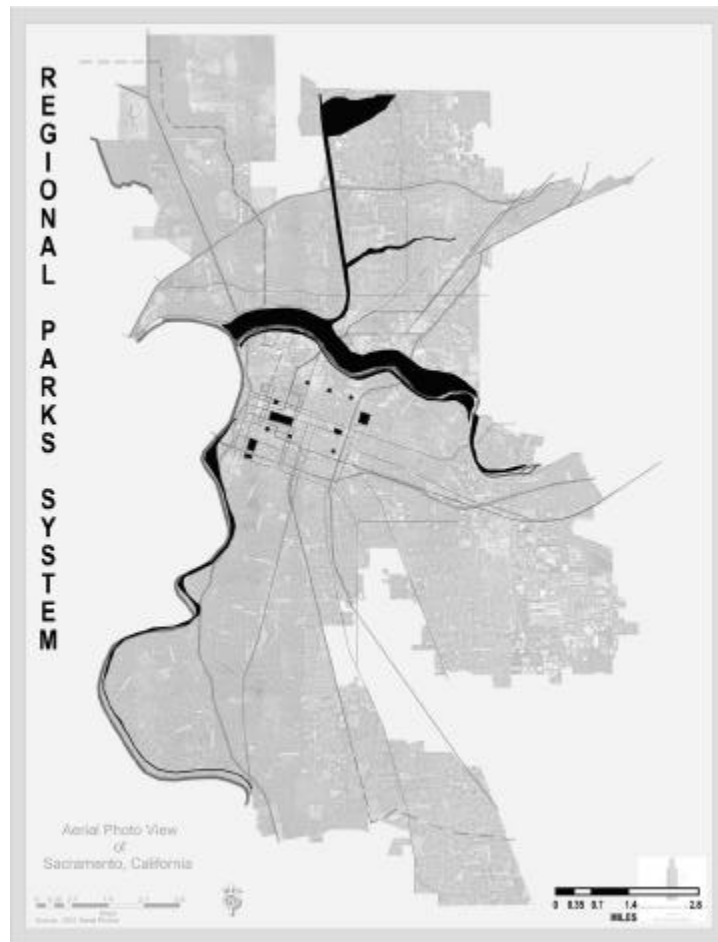
Figure 27: Possible East West Connections



**Figure 28: Possible Grid Extension**

## Green Space

Sacramento is well known for its regional and local park system. The city is sited along a nationwide, hike-bike trail called the American Discovery Trail, and locally this follows the path of the American River. This as well as other trails, creates a rather extensive peripheral green way around the downtown along both the Sacramento and American Rivers that can be seen in the Regional Parks diagram below.

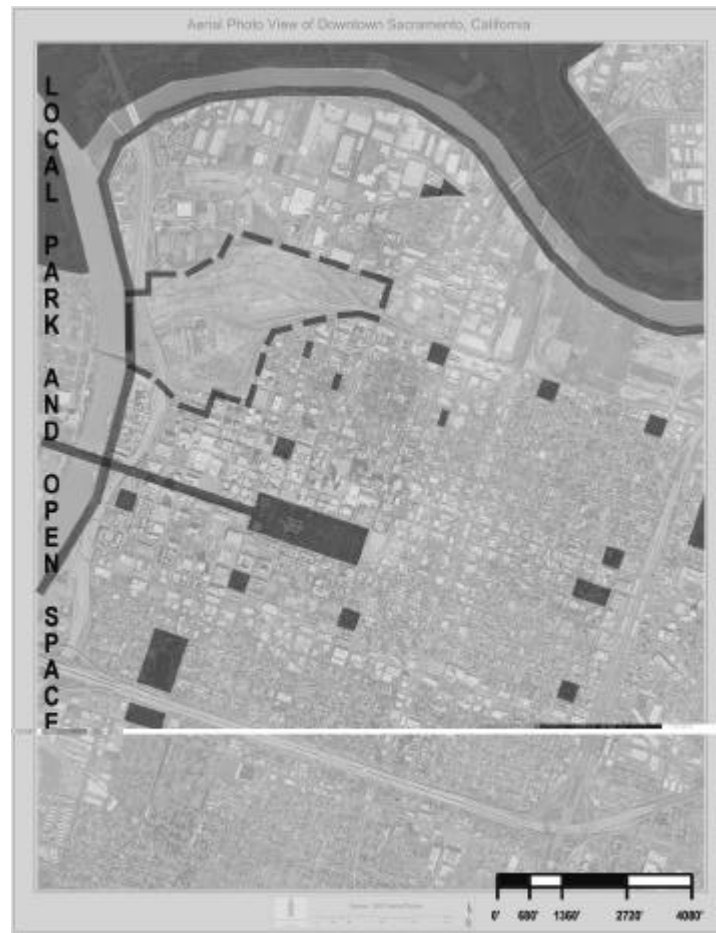


**Figure 29: Regional Parks System**

Additionally, Sacramento was planned to have a regular matrix of block sized squares or plazas throughout the city. The original plan for this can be seen in the earlier diagram [Fig. 10]; however it has matured into the system seen in the Local Parks and Open Space Diagram



below. The most prominent piece in this local system is the Capitol Mall which creates a grand gesture to the Sacramento River, with the state capitol building generating that axis.



**Figure 30: Local Parks System**

While this system does seem to be rather comprehensive, there is obviously a large discrepancy between open space in the downtown and the North End. Also because of the nature of land uses in the North End the connections of the regional parks system into the downtown are peripheral and not always safe or obvious. As seen in the Designated Bike Circulation Diagram, despite the relative ease of biking in the city, the delineated system of urban paths and connections to the river and regional systems are rather tenuous and not fully matured. Therefore it seems that at the scale of the city, investment needs to be made in creating an integrated system of urban paths that not only connect the city parks to each other,

but then creates an imageable connection back to the rivers and the regional and national trail systems.



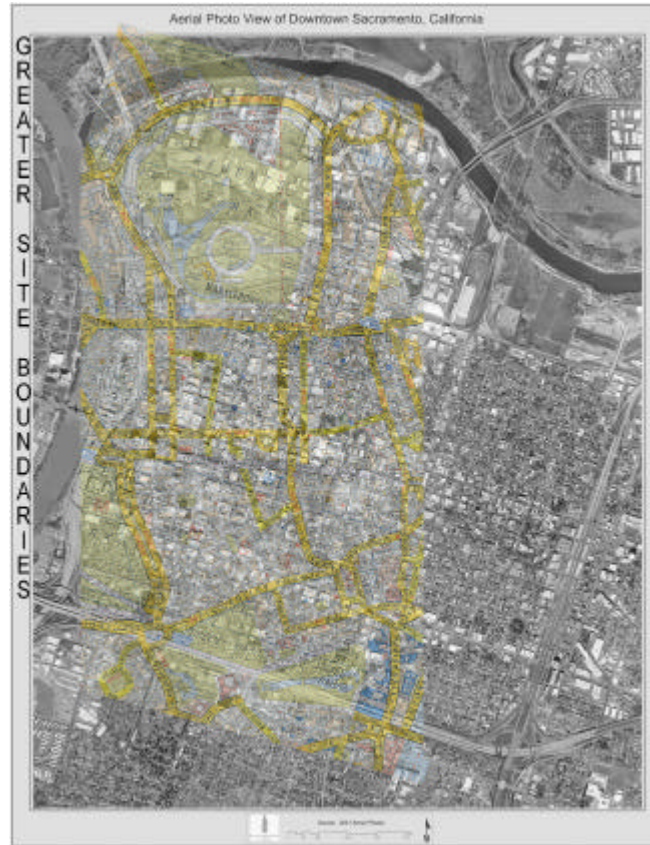
**Figure 31: Designated Bike/ Pedestrian Circulation**

In order to better understand how this might be done three urban parks were scaled onto the city and site to understand how the role of urban pedestrian promenades may play out in the intervention. First Central Park in New York City was placed over Sacramento [Fig.32]. From this it is understood both how big Central Park is, but also how the entire length of downtown correlates to a known urban promenade.



**Figure 32: Central Park Overlay**

Secondly, Regent's Street and Park in London is also approximately the same dimension as the north south dimension of Sacramento. In fact Regent's Street begins very near US 50 at the South and continues very close to the southern edge of the Railyards. These two examples begin to reinforce that much like the street system, a north south urban promenade culminating in a large park gesture in the North End or at the American River may be appropriate, and could begin to link the large park at the south the Capitol Mall, the Transit and Railyards sites etc.



**Figure 33: Regent's Street Overlay**

Finally, the Boston Park System was tested. Figure 34 shows how the entire system wraps from the site along the northern suburbs and returns to the American River at the location of the California Expo Fairgrounds [not labeled]. Much like Regent's Park, Franklin Park covers the majority of the North End, which may be too big. However, the idea that because a regional parkway already exists, an intervention [not taken on here] that located other parks and areas of recreation along it and then culminated in a grand park downtown has precedence in this diagram.



**Figure 34: Boston Park System Overlay**

This could serve two purposes. It would link the North South urban promenade begun at the park in the South to the Regional Park System, and in terms of scale, the Railyards site seems both appropriately sized and located to handle this. But what size is appropriate and how to insert such a park or system is an equally challenging question. So the Boston System was broken into its constituent parts and placed on the Railyards site individually to better understand how large parks can be inserted or planned in such a way as to create value for the surrounding properties. The following three diagrams relate three different possibilities of park insertions on the site:

## GREENWAY



**Figure 35: BPS--Muddy River Overlay**

INFILL/ BUFFER



Figure 36: BPS--The Fens Overlay

## PRESERVE/ SANCTUARY

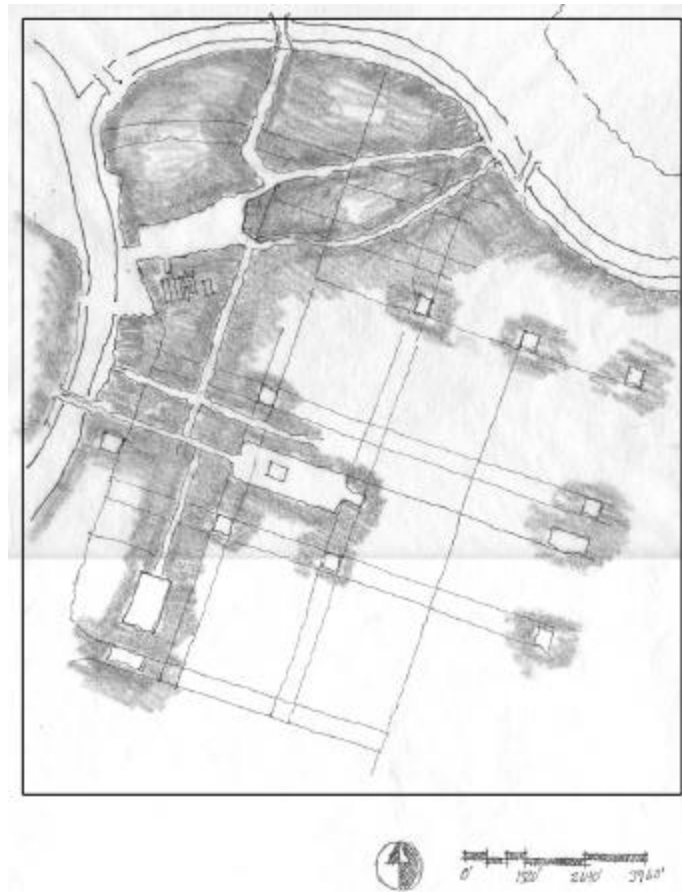


**Figure 37: BPS--Jamaica Pond Overlay**

More than just formal gestures and movement systems the green spaces and parks in many places were made to create value and preserve open spaces. So on a contaminated and stigmatized site, an intelligent park system on the site has the ability to create development value around it through the creation of an amenity and the removal of a disamenity. Also mentioned earlier were EPA Pilot Programs which specialize in introducing new decontamination technology to sites—one of which could be natural and biotic remediation systems which use water follies, micro-organisms and plant species to remediate toxins in the soils. That said, a park working in tandem with the EPA and the adjacent water filtration facility, could have the dual purpose of serving as an amenity and as a remedy to a hazardous



condition in an ecologically sustainable manner. An early idea of what such an intervention that begins to link regional and local systems might look like can be seen below in Figure 38.



**Figure 38: Conceptual Green Space Proposal**

### Mass Transit

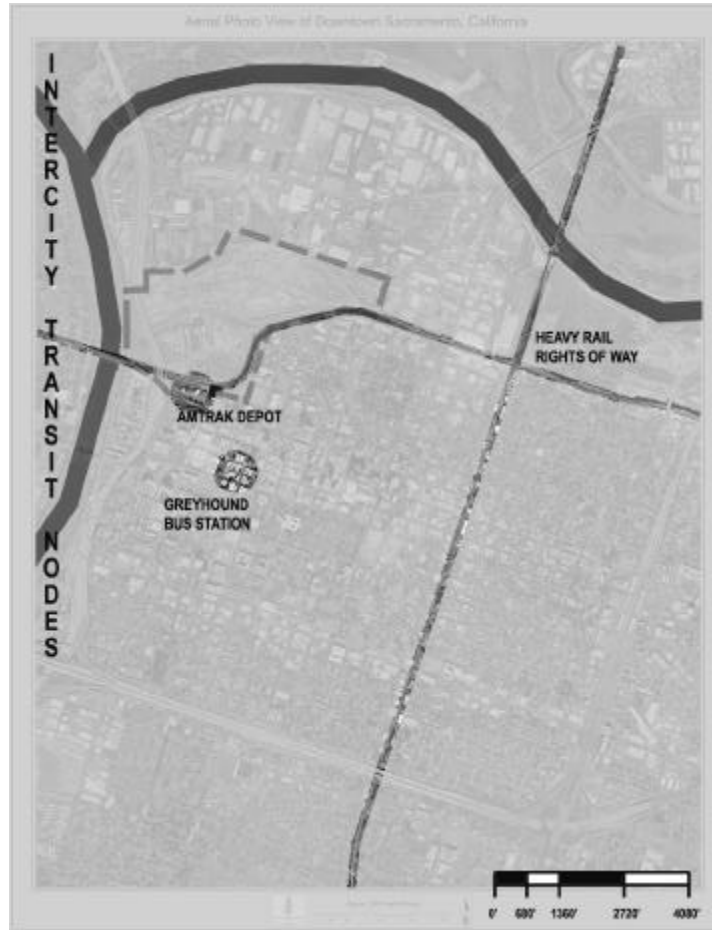
The third system that is of importance in this discussion is the mass transit system, and the requirements of the individual modes that are to be accommodated by the transit facility. The primary reason for the facility is for the consolidation of five modes that operate in and through the city. These are:

1. Heavy rail [commuter and freight]
2. Intercity bus [e.g. Greyhound]
3. RT [municipal] Bus
4. RT Light rail
5. Private Automobile

Beginning with heavy rail, the current alignment of the rail right of way can be seen in the Intercity Nodes Diagram below along with the location of the Historic Depot which currently serves as the local Amtrak station. The station currently services two commuter lines [Capitol Corridor and the San Joaquin's lines] and two national Amtrak routes [California Zephyr and the Coastal Starlight]<sup>t</sup>.

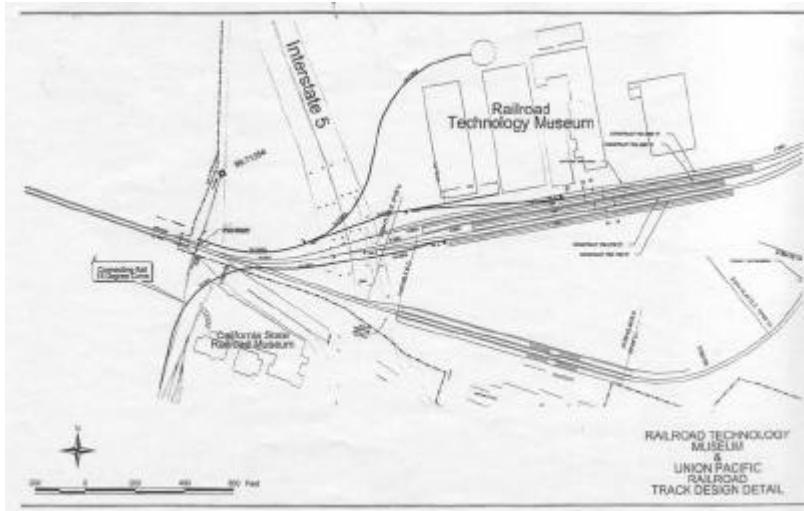
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<sup>t</sup> <http://www.amtrak.com> key word Sacramento



**Figure 39: Existing Intercity Transportation Nodes**

The station right of way also services UP freight traffic. At this time there are four tracks in the right of way at the station which are all currently used for both passenger and freight rail traffic. Both the UP and Amtrak would like to see an expanded right of way that would include an additional three tracks solely for freight. At the specified dimensions this creates an easement of 220' in width across the site. Both parties would also like to see the easement straightened from its current curve to a straighter path that passes along the south-side of the shops [Figure 40].



**Figure 40: Existing and Current Proposal for Railroad Easement<sup>u</sup>**

This move is good and bad. It is good, because the existing conditions and adjacencies [e.g. the Federal Courthouse] would make it very difficult to bridge or tunnel the tracks again west of 7<sup>th</sup> Street. However, moving the alignment closer to the Shops could raise concerns of structural integrity of the remaining structures. Also, the addition of the extra tracks will increase the easement dimension by three to four times requiring greater infrastructure to bridge the tracks. It will be considered for the purposes here that the easement should be re-aligned, but the UP alignment will be reconsidered based on the needs of the two earlier systems.

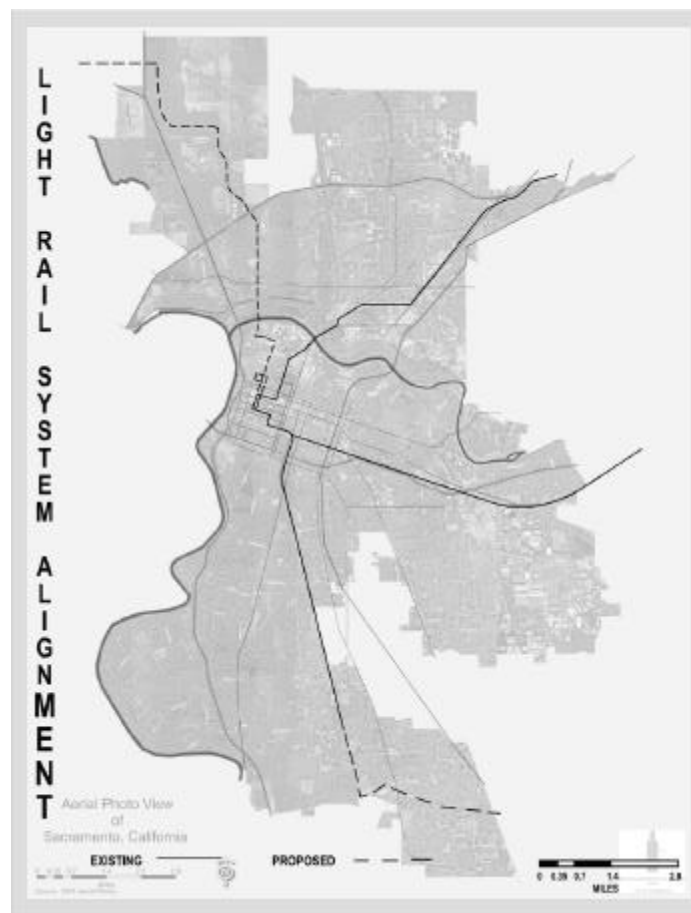
In terms of adjacencies, the train needs to be most accessible from private automobile traffic [including taxi] and the Amtrak Thruway Bus service and then secondarily from RT bus and light rail.

Intercity bus traffic is primarily Greyhound but also consists of Amtrak Thruway Bus service. The Greyhound is currently located southeast of the historic depot on L Street [Fig. 39 above], while the Amtrak service is located at the depot.

<sup>u</sup> Image courtesy California State Railroad Museum

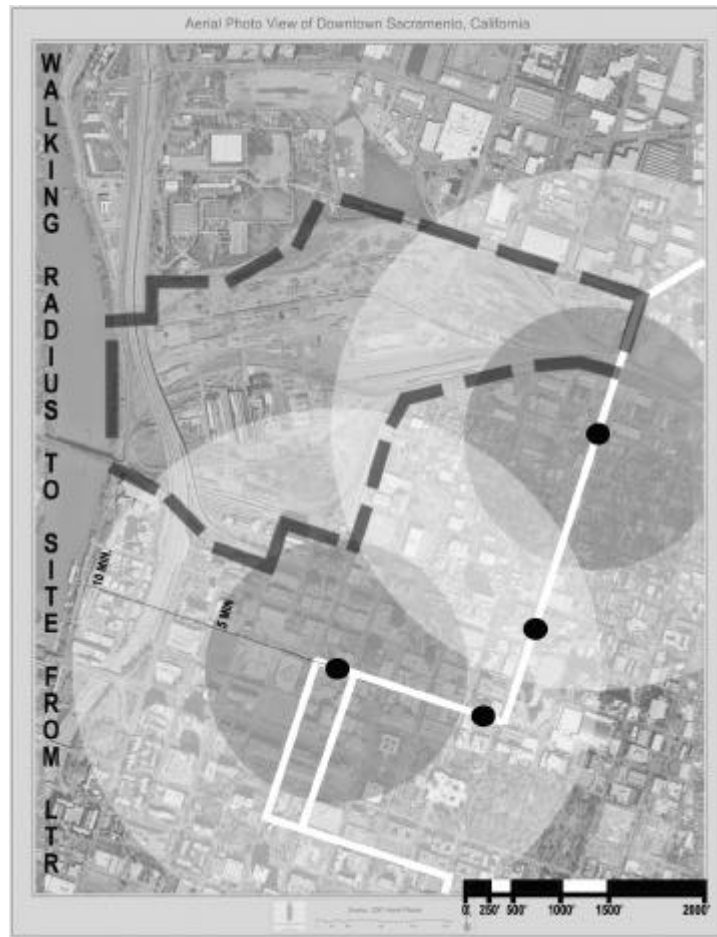
Consolidating the Greyhound into the new facility will have to take into account access to the highway or interstate, as well as account for the space necessary for maneuvering keeping them identifiable from the other modes. With respect to adjacencies the Amtrak Thruway needs only access to the Amtrak trains, while the Greyhound users will be primarily transferring to RT Bus or Light Rail.

Light Rail service currently extends (north) East and South along three branches that are essentially centered on the 7<sup>th</sup>/8<sup>th</sup> St. and K St. stops. Figure 41 shows the system as it is in a solid line and the city's proposed extension north to the Airport through the site and the North End in a dotted path.



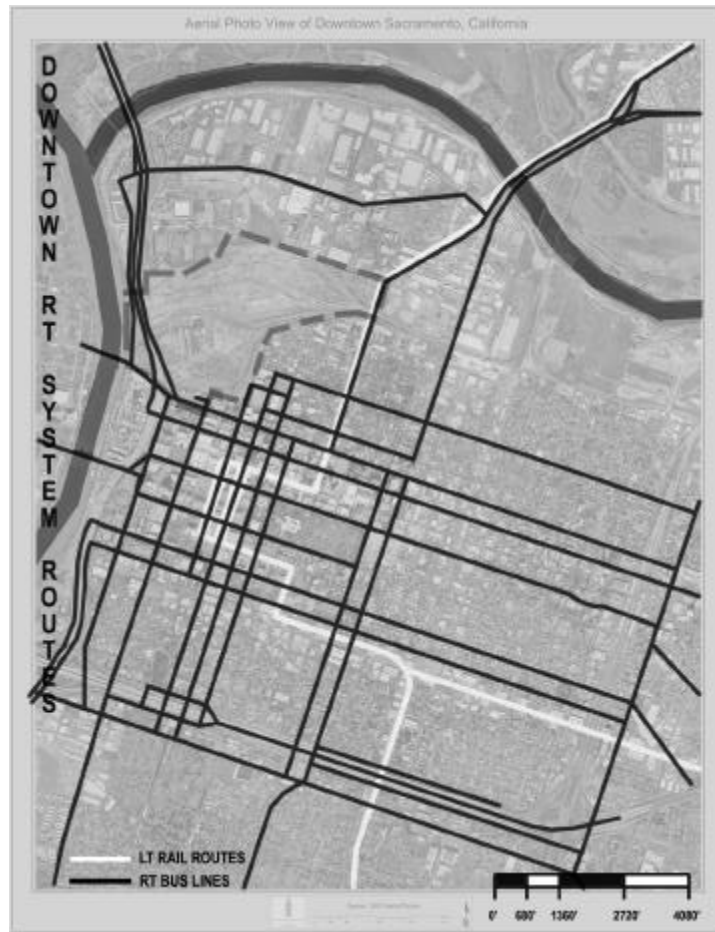
**Figure 41: Existing and Proposed Regional Light Rail Alignment**

The particular proposal routes north on the new 7<sup>th</sup> Street extension and then west along Richards Boulevard, crossing the American River via an alley right of way in a light manufacturing area. It also does not seem to route the northeast line into the station, or at least not directly. The connection to the airport has the potential to increase the role of light rail in regional transportation, and if the transit facility can re-center the light rail system then the building as an interchange will truly become intermodal and a very powerful center for regional transportation in northern California. Given the connection to the airport, the light rail will demand adjacencies to all modes, but currently it will primarily need proximity to the RT and Intercity Bus services. The Walking Radius diagram below shows the location of the stops near the site. There are currently no stops north of the tracks until the other side of the American River. This implies that in addition to the new northbound line, the existing lines will have to be filled in with additional stops.



**Figure 42: Proximity of Railyards to Existing Light Rail**

The Downtown RT System diagram recounts a similar story to the above systems in that the system will have to become denser in the North End and around the site. As much as these diagrams demonstrate the need for more comprehensive transit options—that can be centered on the new facility—it also reinforces the need for a comprehensive vehicular circulation system, and that none of these systems are exclusive of the others, and in fact can rely on each other.

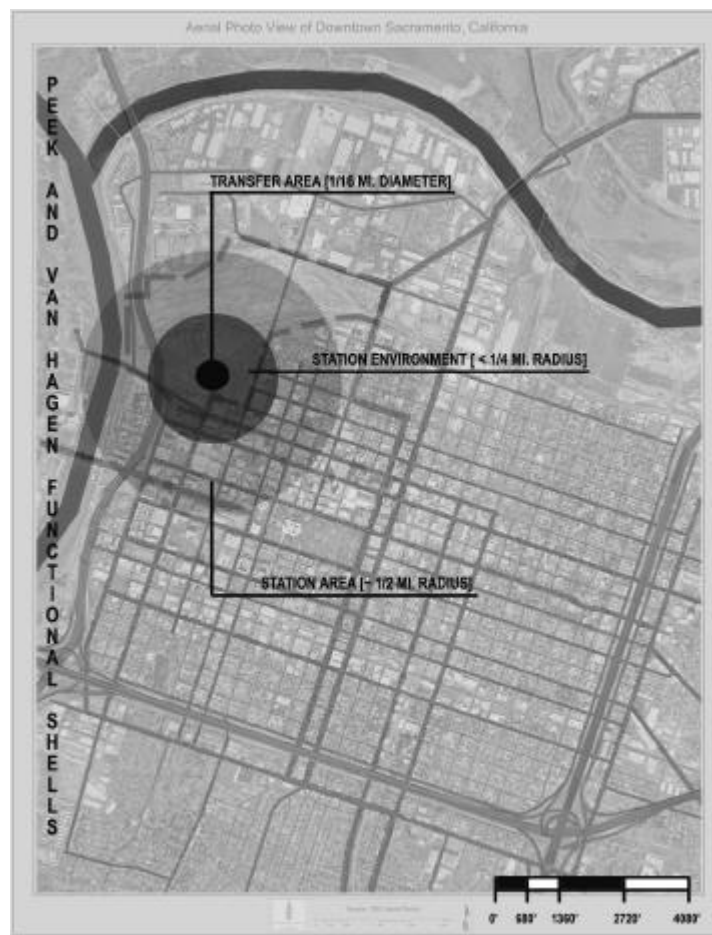


**Figure 43: Downtown RT Networks**



## Activity

Mentioned earlier was the idea that the composite or overlay of the three systems may lead to an understanding of where activity is going to occur or where investment might be most probable. This is echoed in the Functional Shell diagram taken from an article by Peek and Van Hagen.<sup>v</sup> The article designates three levels of activity that should be sponsored by a modal interchange.

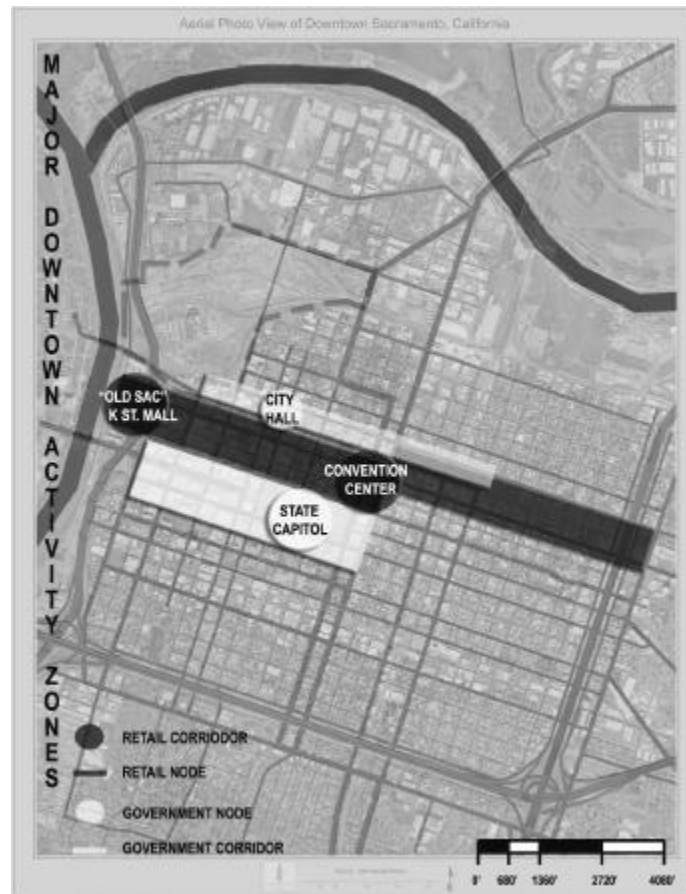


**Figure 44: Functional Shells: Proximity to Intensity**

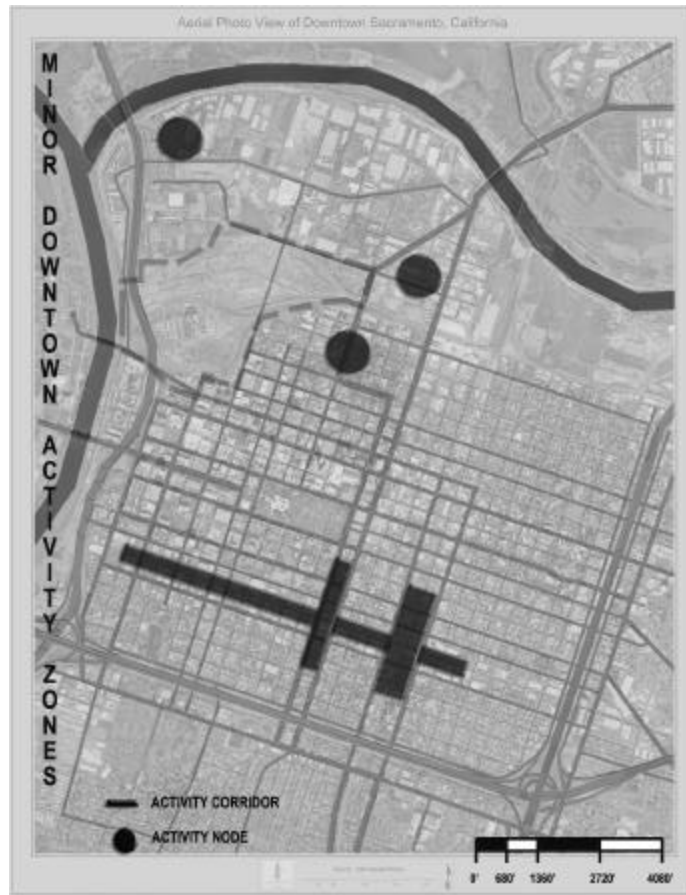
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<sup>v</sup> Gert-Joost and van Hagen, 2002

This is summarized by the smallest shell is focused on the mode transfer (the building); the second is concerned with related services and is identifiably related to the station somehow (the district); the third is less explicit but imageable and within which can be found the wider range of goods, employment and services (the city). So given this, it would seem that the more systems that intersect (much like street intensity diagram) the more intense each of those shells becomes—meaning they contain more and diverse services. Taking this, the following two diagrams show the locations of relative activity intensity in the city as a system of nodes and corridors. These can then be compared to earlier diagrams of transportation systems and district divisions.

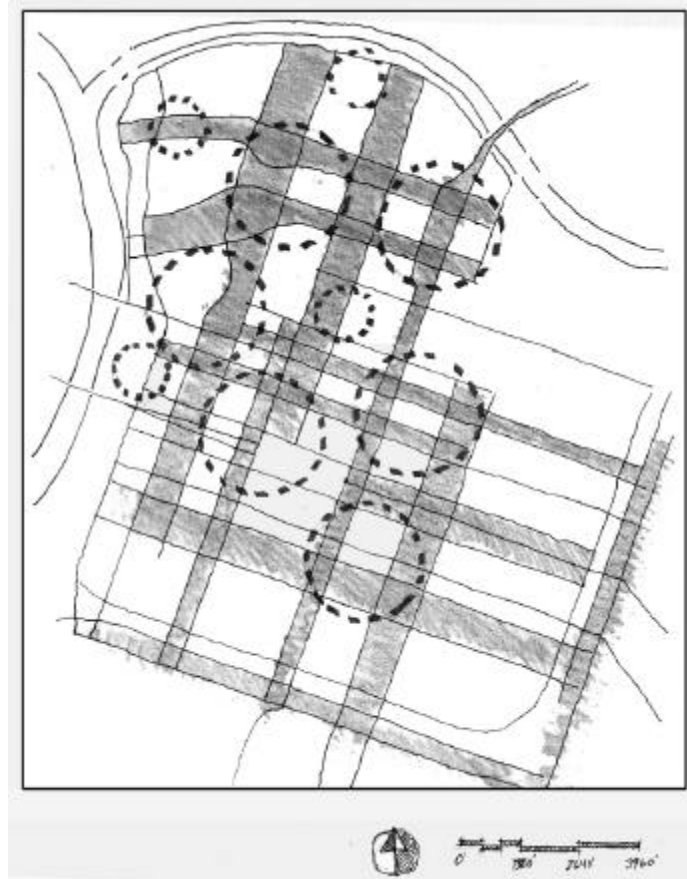


**Figure 45: Existing Major Activity Nodes and Corridors**



**Figure 46: Existing Minor Activity Nodes and Corridors**

Then taking the projected new grid from system one and possibly the projected light rail routes from above it is possible to begin mapping where new nodes and corridors and district lines might be drawn in the North End and how they begin to relate and influence the existing ones.



**Figure 47: Projected Activity Nodes and Corridor Pattern**



**Figure 48: Projected Neighborhood/ District Designations**

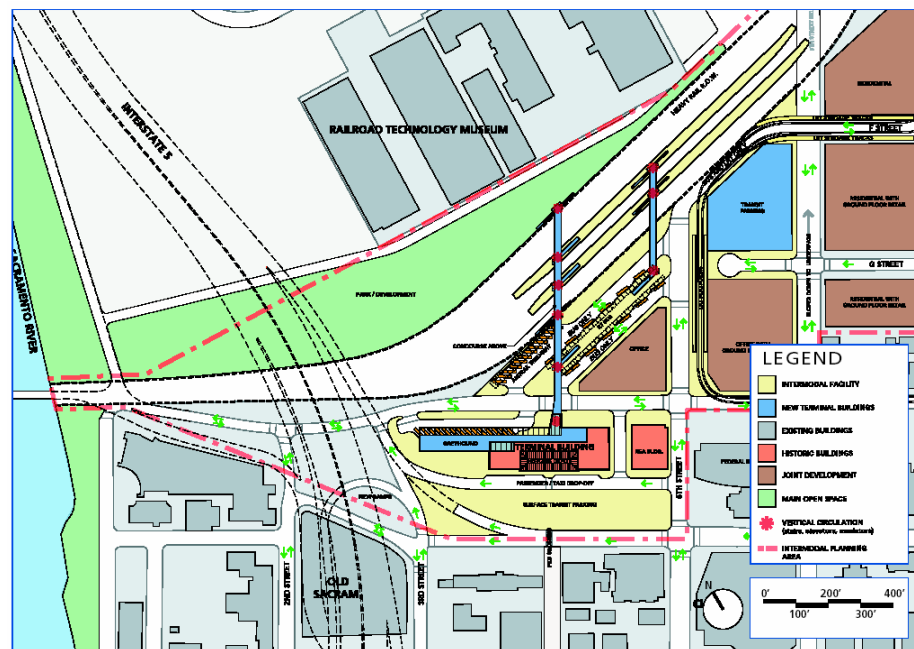
These diagrams are in many ways hypothetical but begin to give an understanding of how the Railyards and the North End could naturally integrate given certain discrete planning gestures.

## Chapter 5: Responses to Current Proposals

Alluded to at the start, a part of the impetus for this project was a reaction to the city's published proposals for the intended Intermodal Transit Facility. The following is a brief introduction to the proposals and the three major points of dissent.

### Transit Facility Proposals

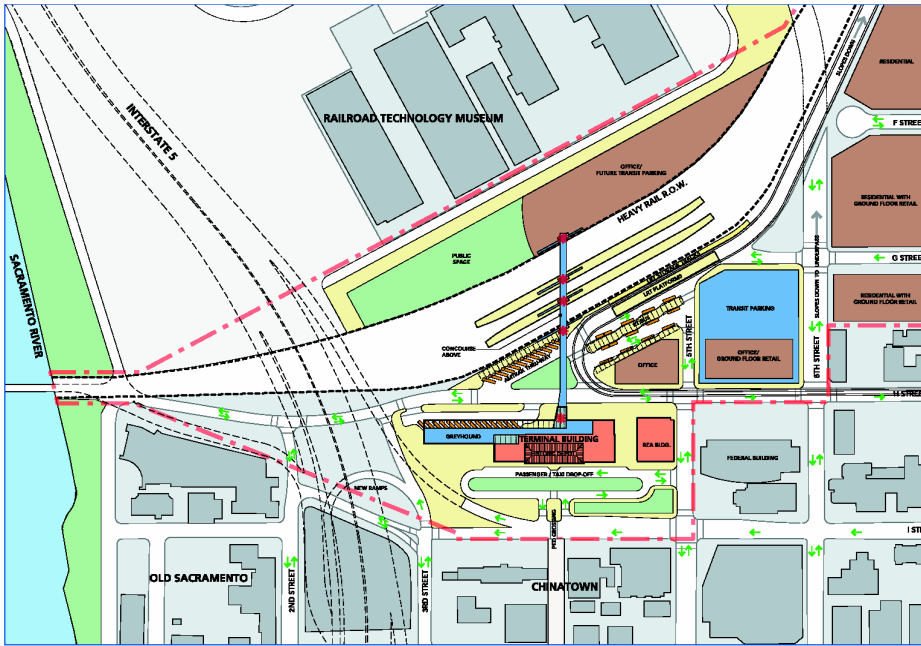
#### Valley Flyer



**Figure 49: City Transit Facility Proposal: "Valley Flyer"<sup>w</sup>**

<sup>w</sup> Figures 49-52: City of Sacramento: WP#10, 2004

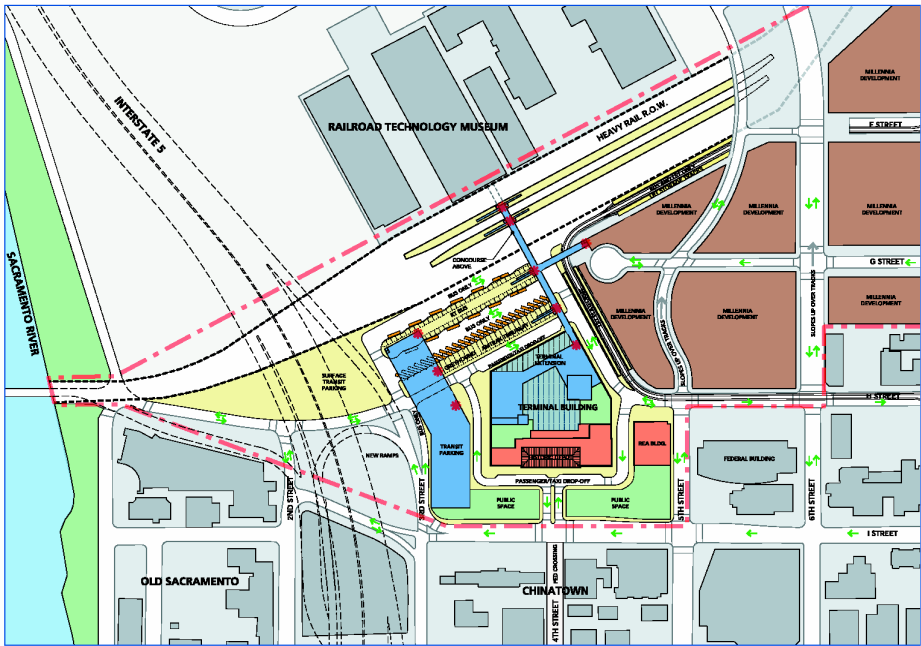
Overland Limited



Alternative C: Overland Limited

Figure 50: City Transit Facility Proposal: "Overland Limited"

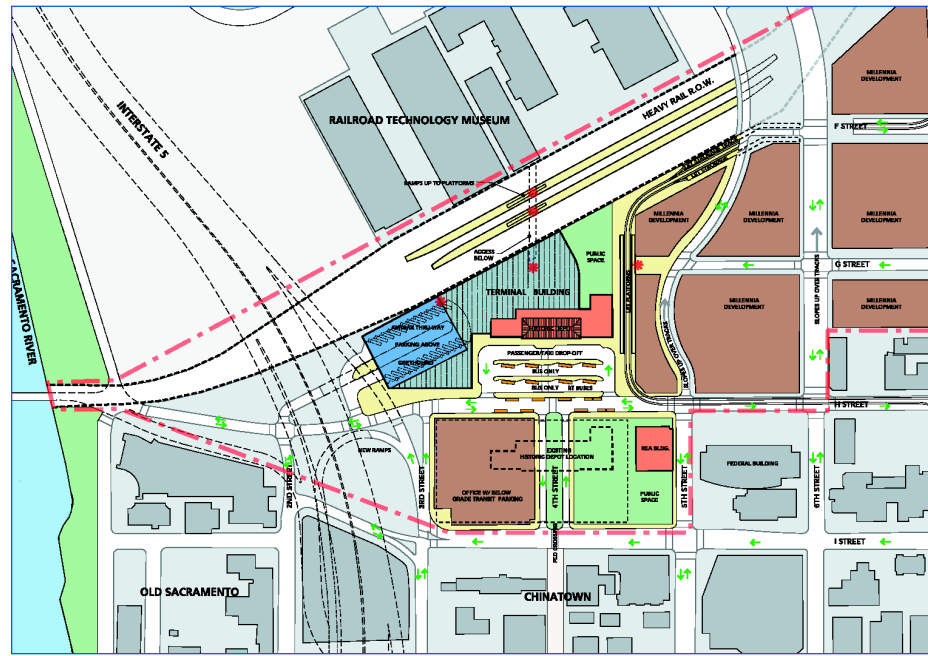
Sunset Limited



Alternative A: Sunset Limited

Figure 51: City Transit Facility Proposal: "Sunset Limited"

## Sacramento Northern



Alternative B: Sacramento Northern

**Figure 52: City Transit Facility Proposal: "Sacramento Northern"**

### Reaction to Proposals

Initially, the question is raised with these four schemes, why is it necessary to retain the historic depot as an integral piece of the new facility. With the movement of the easement north, obliging the depot to remain intact seems only to complicate the project. It seems that the gesture to retain the historic depot as an integral piece either causes excessively long and awkward corridors to the platforms and other modes or requires the movement of the depot entirely in order to create an efficient interchange. It seems that despite the retention of the depot, there is still a need to build a new facility, and if this is the case then it would seem more practical to build a



separate facility and allow the depot to take on a different but possibly tangential function.

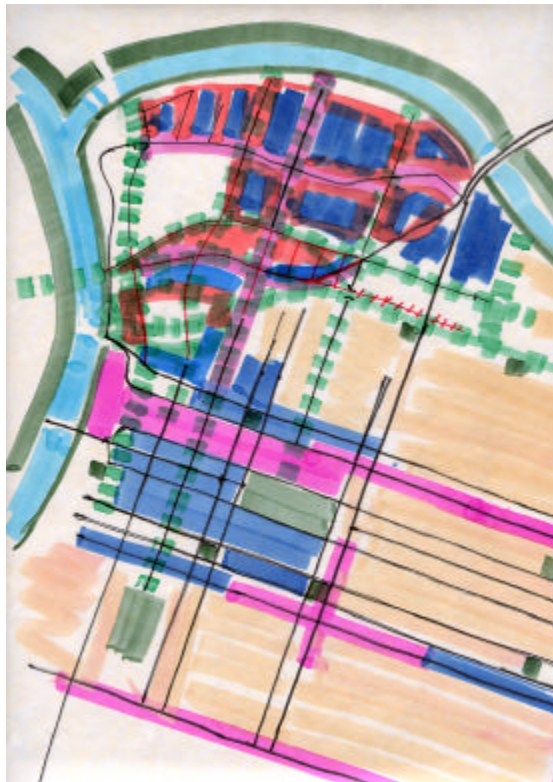
Secondly, the relative lack of investment in public space or the restoration in of the civic presence of the historic depot or new station is rather disappointing. Two of the proposals retain the ramps to the Interstate which allows the fourth street approach to remain difficult or impossible by pedestrians. The “Overland Limited” calls itself leaving the ramp and opening the axial approach, however, that seems more dangerous than appropriate. Only the “Sacramento Northern” scheme makes an attempt to bring a public space into the urban program, however, this is also the scheme that relocated the depot. It would seem that with the ramps relocated and a separate facility pulled back to the new easement, that the creation of a commendable public space could be achieved without having to move the historic depot. Also, it would seem that the public space would be better served as collector of the different modes rather than something which departing passengers required to pass through other modal interchanges to reach.

Thirdly, the continued use of 6<sup>th</sup> Street as the primary means to cross the tracks seems counter productive. A street that crosses the tracks that close to the station would seemingly want to be able to collect and distribute traffic and riders from both the north and the south; however, 6<sup>th</sup> Street terminates two blocks south at J Street. 5<sup>th</sup> Street is the cross town collector, as is 3<sup>rd</sup> Street. It would seem more appropriate to attempt to let the streets with the most potential to bring people and modes in and out to carry through, rather than creating awkward shifts in the grid at a point where multiple circulation systems are expected to intersect.

## Chapter 6: Interventions

### Urban Interventions

The following sketches represent an initial approach to developing an idea of how to organize or re-organize the North End. In fact they predate some of the sketches that were discussed in the earlier section on the three systems; however, these are also much more conceptual in their intent.



**Figure 53: Urban Intervention Sketch 1**

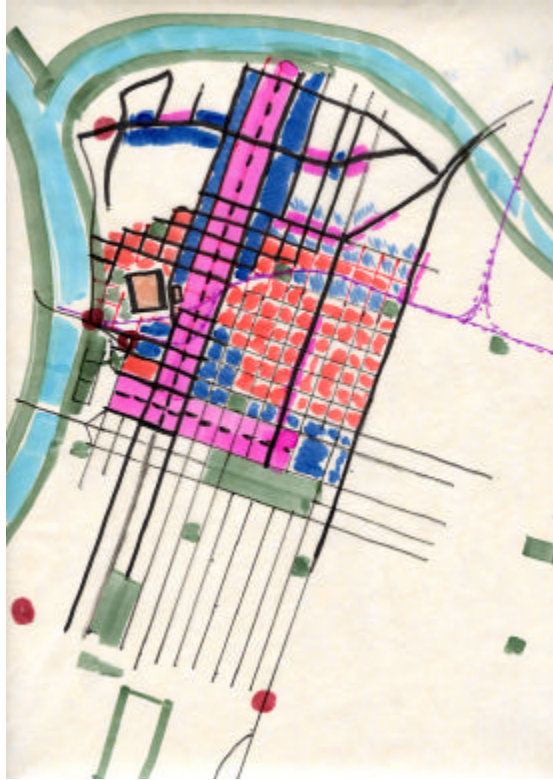
This sketch begins to describe the intent to begin to relate two orders through a matrix of roads and greenways. The new order to the north being large block developments with program layered within the block verses layered by corridor. It

begins to speak to comprehensive, yet independent developments that can arise over time as the larger parcels are made available as apposed to an infill condition that follows a prescriptive zoning pattern.



**Figure 54: Urban Intervention Sketch 2**

This sketch mirrors ideas mentioned earlier concerning a large unifying park that collects the local and regional systems into one imageable entity. This entity then has the ability to sponsor immediately around it a much higher intensity or land value. The park becomes the mediator between the different scales of urbanism present in the two parts of town, and filters the new street grid allowing only the most prominent streets to carry through.



**Figure 55: Urban Intervention Sketch 3**

This sketch allows the downtown grid to infiltrate into the North End with intensity at the boundaries of the two areas, but then begins to break down further north. This change of scales is mediated by the presence of a vertical spine of commercial activity that correlates to the existing horizontal pedestrian/commercial corridor centered on the K St. Mall. The park system is not a strong idea in this parti.



**Figure 56: Urban Intervention Sketch 4**

This sketch provides a progression of internalized parks surrounded by liner buildings. This begins to zone or separate activities which involve commerce and vehicular traffic from the pedestrian and recreational realms. This allows the “urban” condition to remain continuous while the parks become a series of reliefs and incidents that can either contain or guide the promenade from south to north or east to west [both toward the river].



**Figure 57: Urban Intervention Sketch 5**

This is probably the closest to a hybrid scheme where the two systems of vehicular and pedestrian are separated but overlapped to create two parallel movement systems that begin to balance each other north and south. There is less continuity at the vehicular system level, and circulation relies on a few major connectors that intersect creating a series of strips or main streets which begin to unify the whole.





**Figure 58: Urban Intervention Sketch 6**

Similar to the previous scheme, this Savannah “—esque” plan creates two overlapping structures of park and vehicular circulation. A series of primary streets carry the entire length, while alternating streets are interrupted to create enclaves of development that might in some ways be developed each individually. The pattern allows continuity within the new development, however, it does not necessarily relate to the existing fabric beyond the streets that are allowed to pass through. It does draw on the early plan for Sacramento’s park system, but is somewhat excessive and does not seek to unify the regional with the local green systems.

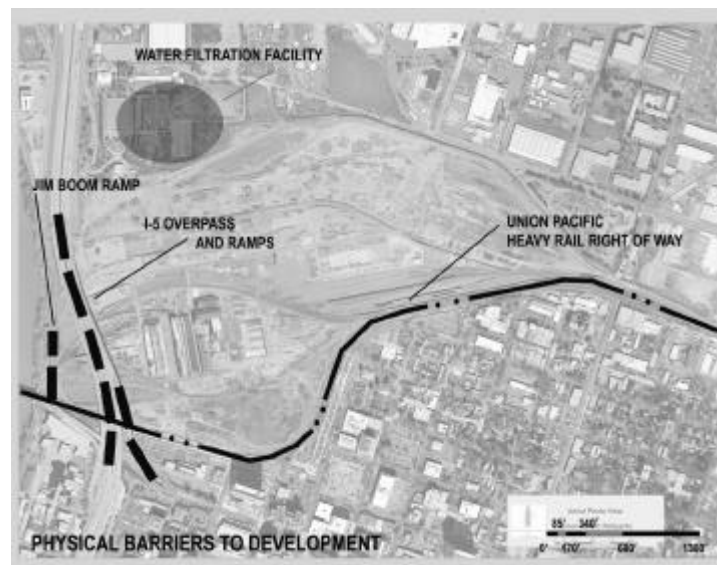
While this provides many options and no solutions per se, it does provide now a matrix of tools to use that can be interpolated to create a finished diagram which will ultimately be found somewhere in the middle.

### District Interventions—Transit Area

The intervention(s) for this area stems from a need to remove many of the physical barriers that exist on the site that do and can impact perception of the site, but also the ability to use the site and its structures appropriately. This intervention must also respond to the needs of the transit facility as well as begin to prepare a place for the facility so that the two begin to inform one another.

#### Barriers on Site

The Barriers on the site are primarily due to the poor introduction of infrastructure into the area. Figure 55 below expresses what some of these issues are.



**Figure 59: Physical Barriers to Development on Site**

One significant barrier is the onramps to I-5 and the I St. Bridge which are located directly in front of the historic depot. This blocks the primary face and approach axis of the historic depot removing any civic presence it has had or could have. The

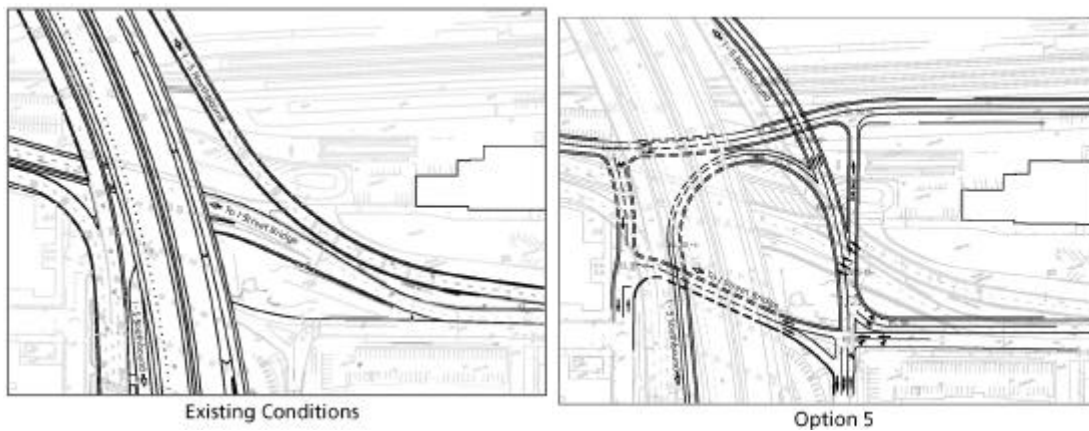


approach has shifted to a side entry off of 5<sup>th</sup> St from where it is not possible to take in the whole façade of the depot, and has left the depot surrounded by surface parking. The other primary barrier is the rail easement itself. Its mandated widening will make it more difficult to cross for both pedestrians and vehicles: 220' is a very long distance to tunnel for a pedestrian but ramping for bridges requires at least a Sacramento city block, creating frontage issues for development along the traversing streets. The movement of the easement also substantially increases the distance between boarding and the current depot [about 500' to the new platforms].

## Responses

### Infrastructure:

- A. Re-align the I-5 ramps to re-open the civic front to the historic depot using one of the city's proposed alignment plans



**Figure 60: Existing and Proposed I-5 Ramp Realignment<sup>x</sup>**

- B. Extend H Street to meet the I Street Bridge to aid in this process by removing the ramp to the bridge from in front of the depot to

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<sup>x</sup> City of Sacramento [WP#8], p. 65

underneath the interstate overpass. This will also allow incoming passenger traffic from West Sacramento to enter directly to the new facility. This has the secondary benefit of allowing the structure to act as a threshold into the city from the West.

C. Extend 3<sup>rd</sup> and 5<sup>th</sup> Street across the tracks

Architecture

Separate the function of the new transit facility from the historic depot to a new structure to the north that is more proximate to the new rail alignment.

Promenade

Relate through a series of new public spaces the historic shops [specifically the Erecting Shops], the historic depot and the new transit station

A. Creation of a new public north face on the historic depot

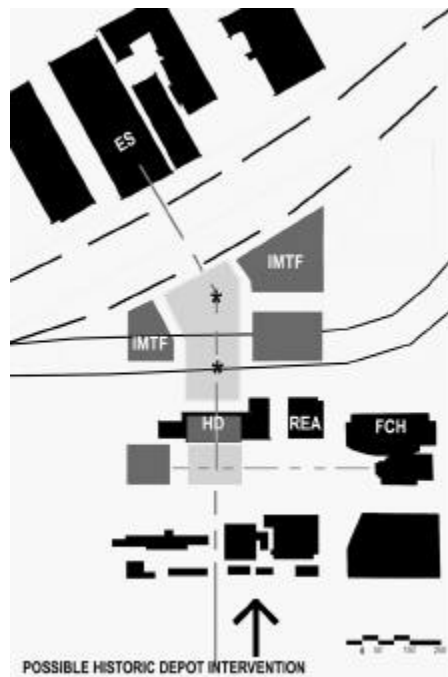


Figure 61: Preliminary District Intervention Schematic

*Architectural—Transit Facility*

Urban and District Threshold

Modal Threshold

## Chapter 7: Final Proposal

### Master Plan

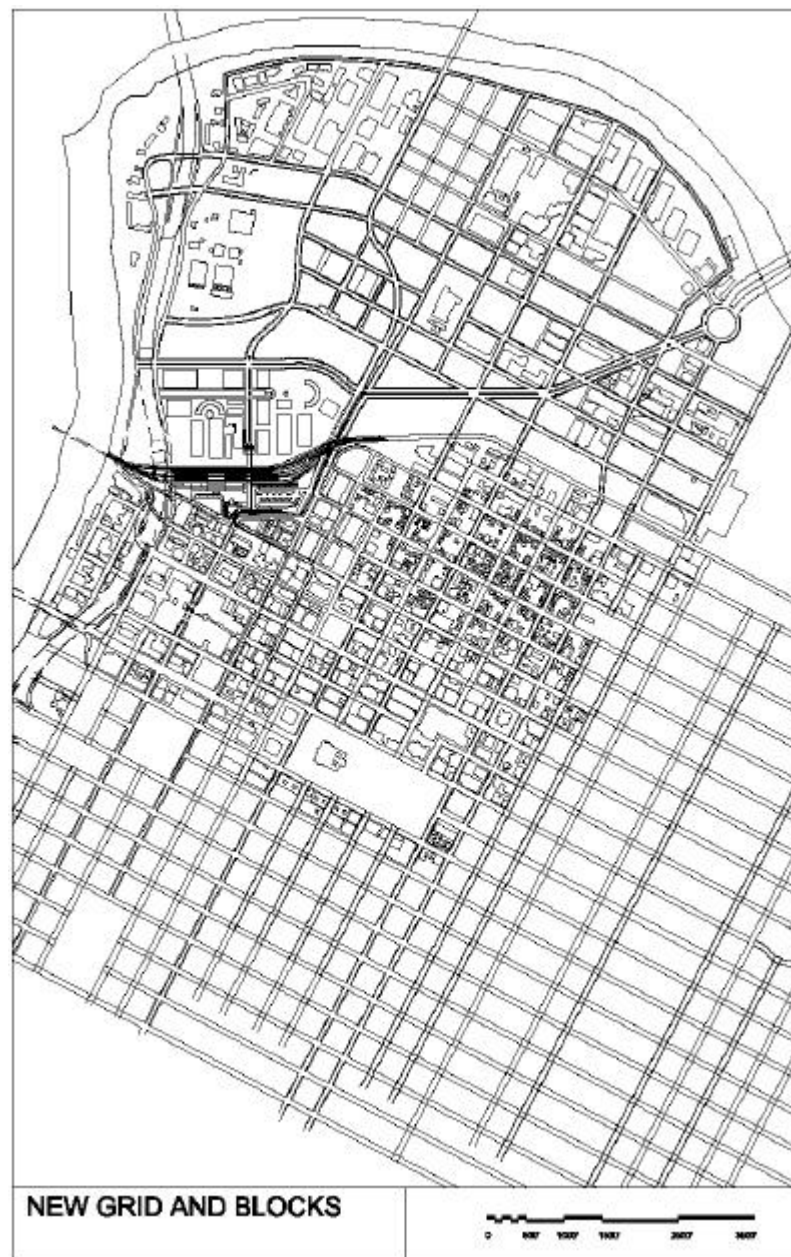
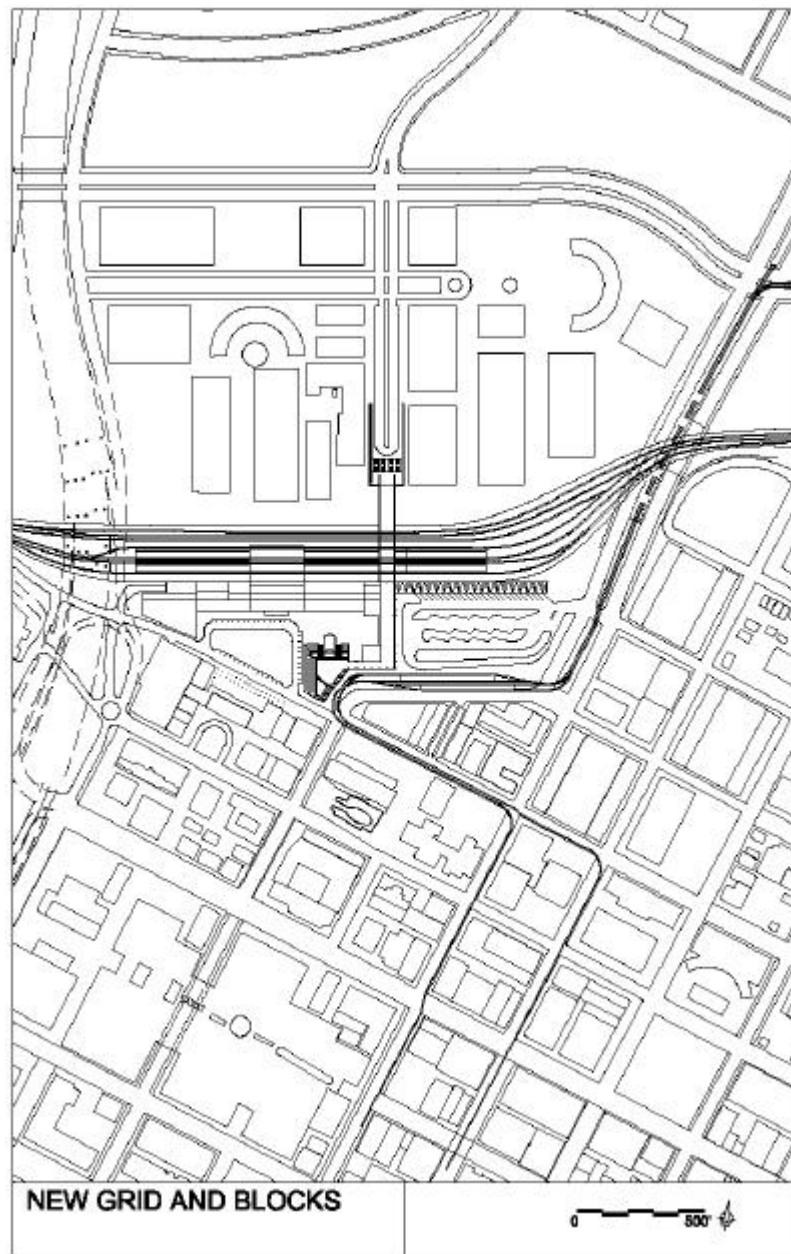


Figure 62: New Grid and Block Plan

*Transit Plan*



**Figure 63: Transit Center Area Plan**

## Building Plan

### Plans

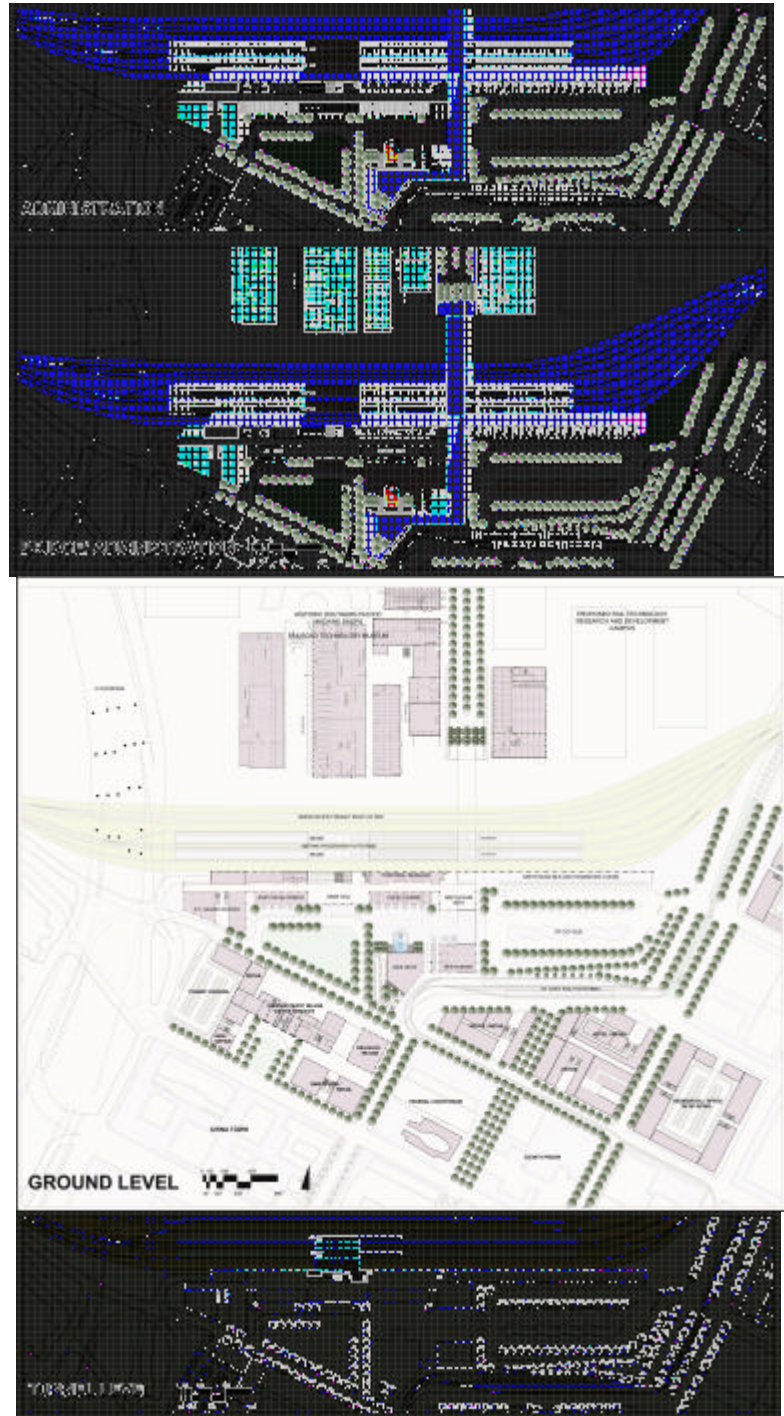
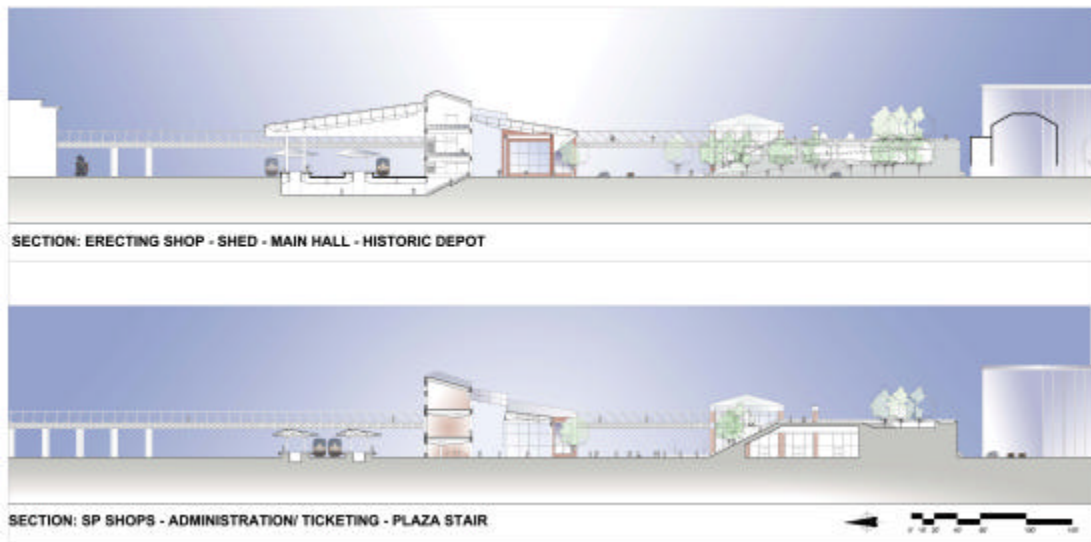


Figure 64: Building Floor Plans

## Sections



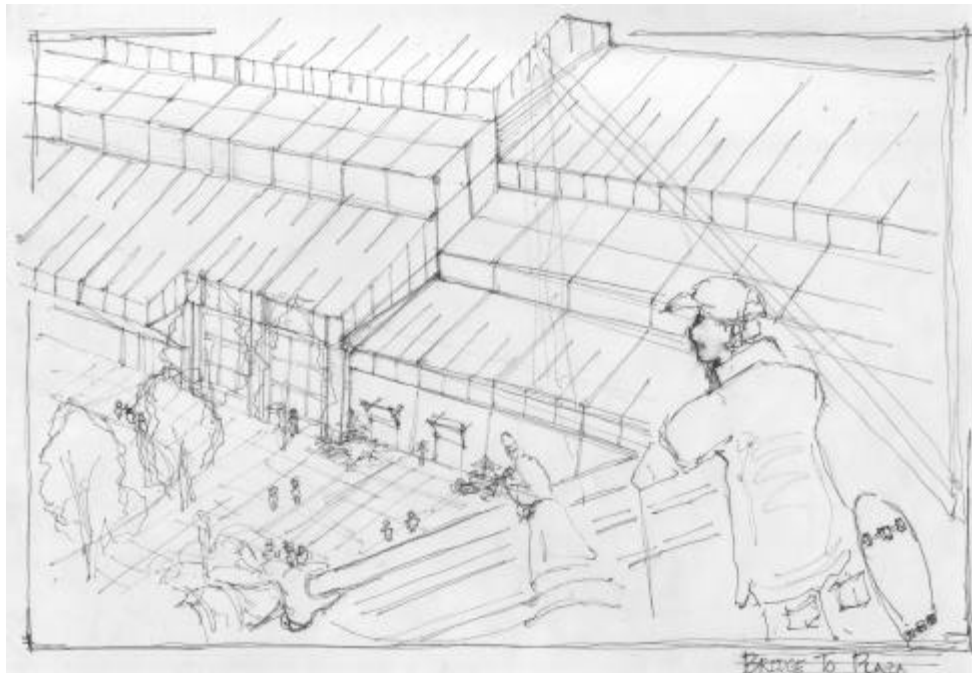
**Figure 65: Building Sections**

## Elevation

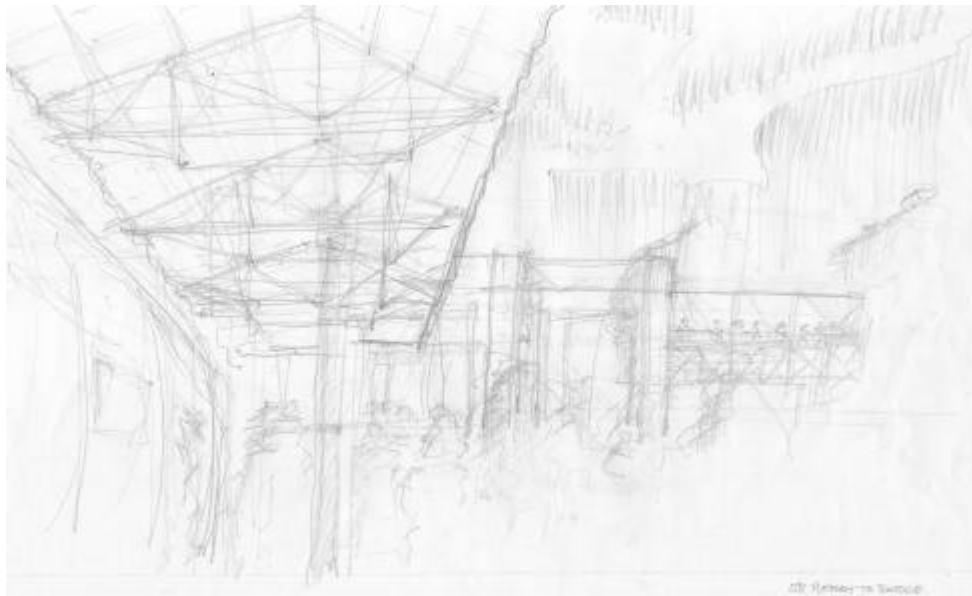


**Figure 66: H and 5th Street Elevation**

## Perspectives

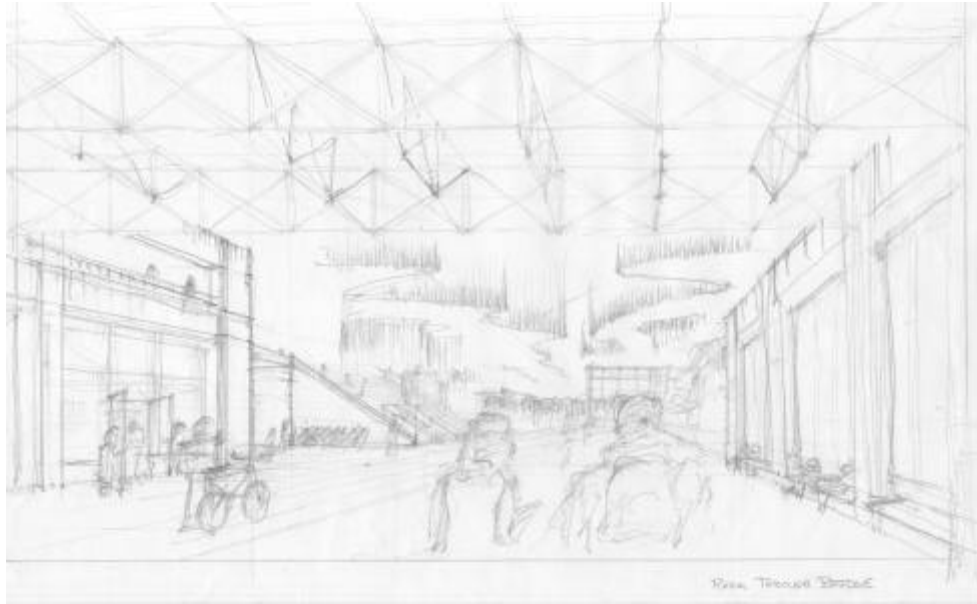


**Figure 67: View from Pedestrian Bridge to Station Plaza**

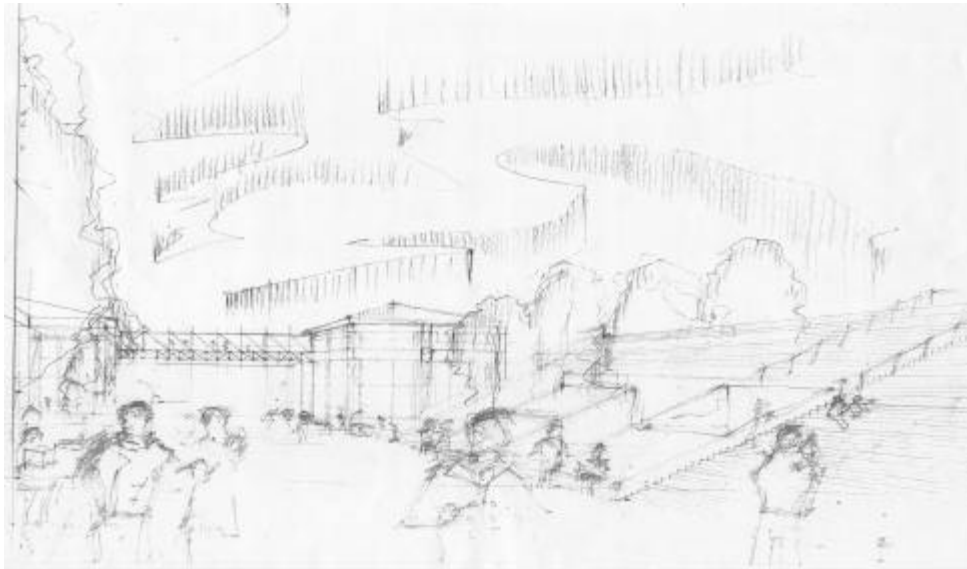


**Figure 68: View from Light Rail Platforms**

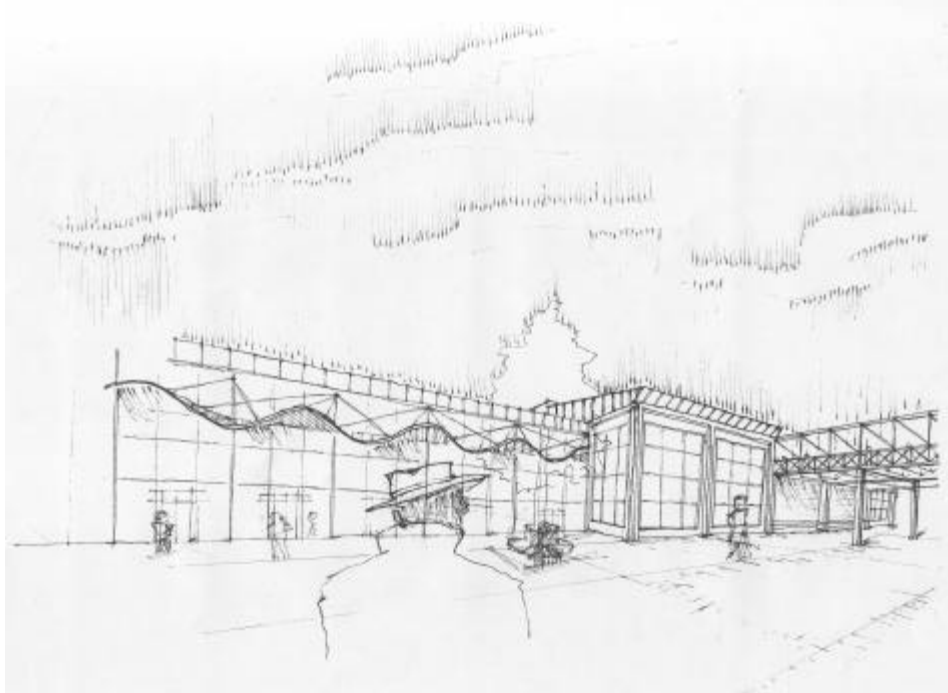




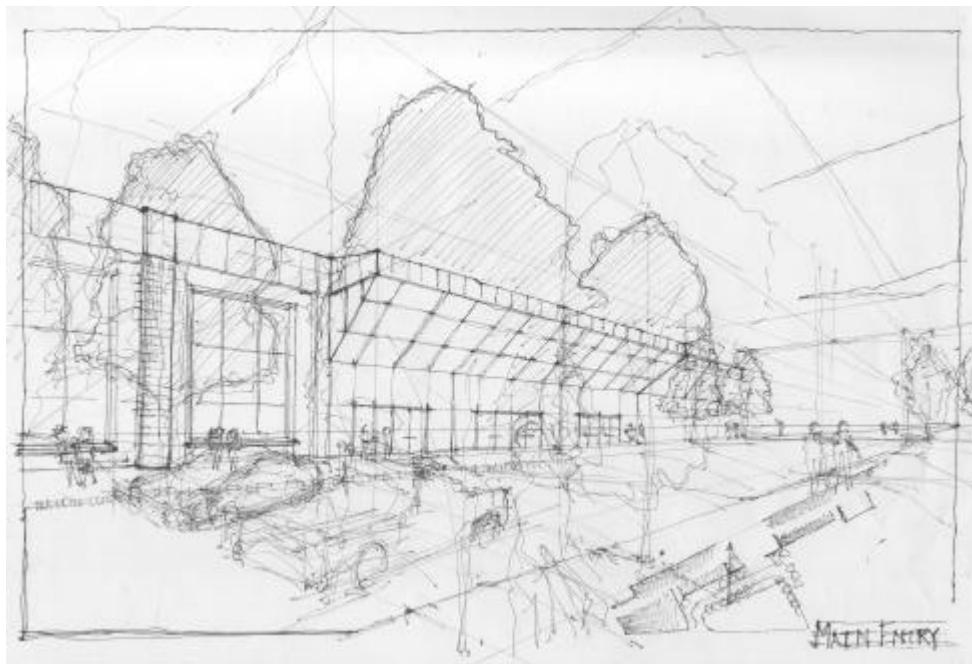
**Figure 69: View to Plaza Passing Under Bridge**



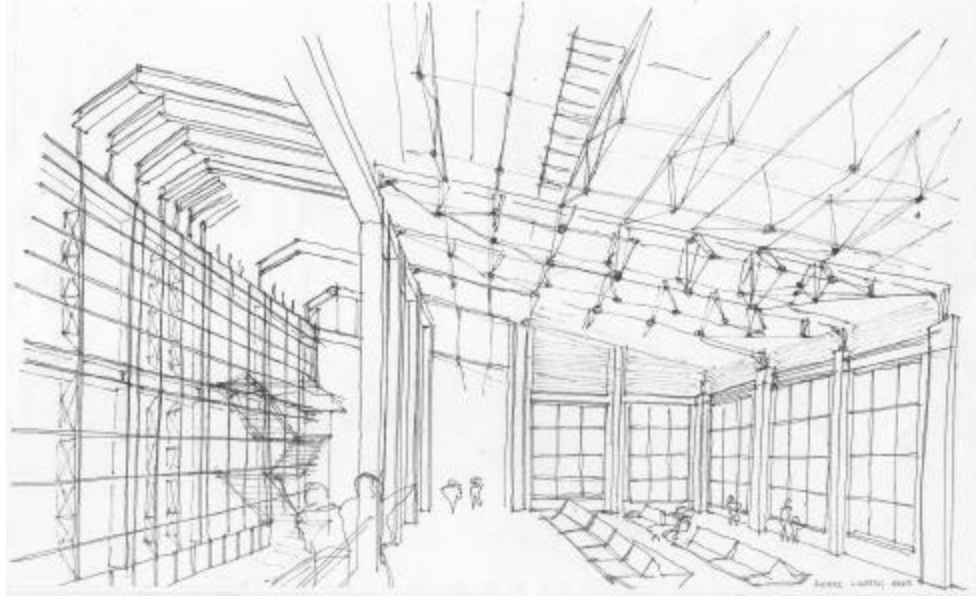
**Figure 70: View of Station Plaza Toward Stair and Bridge**



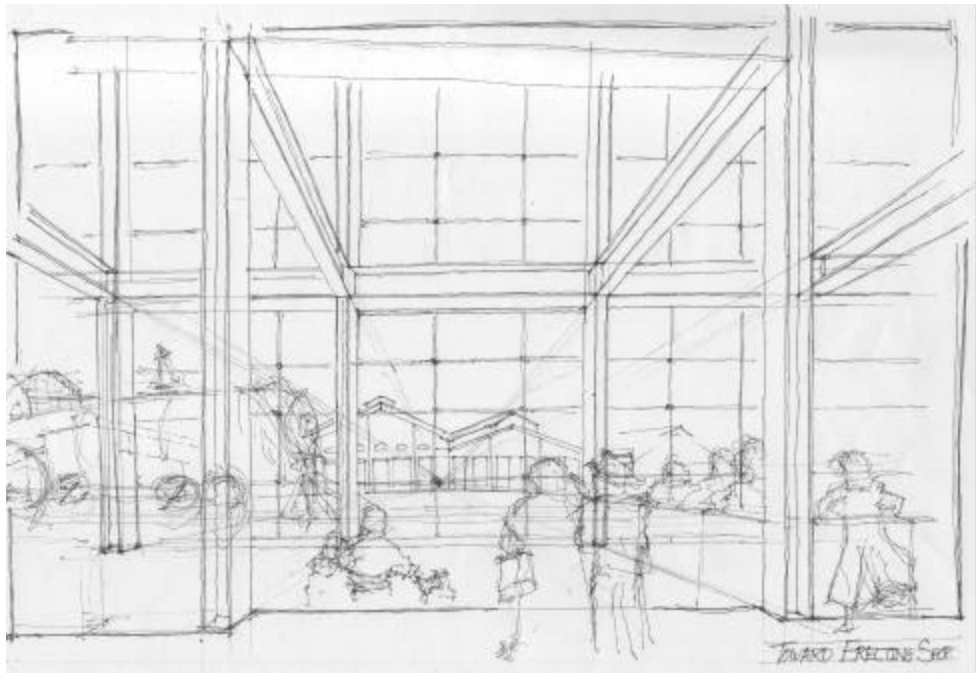
**Figure 71: View of Station from Plaza**



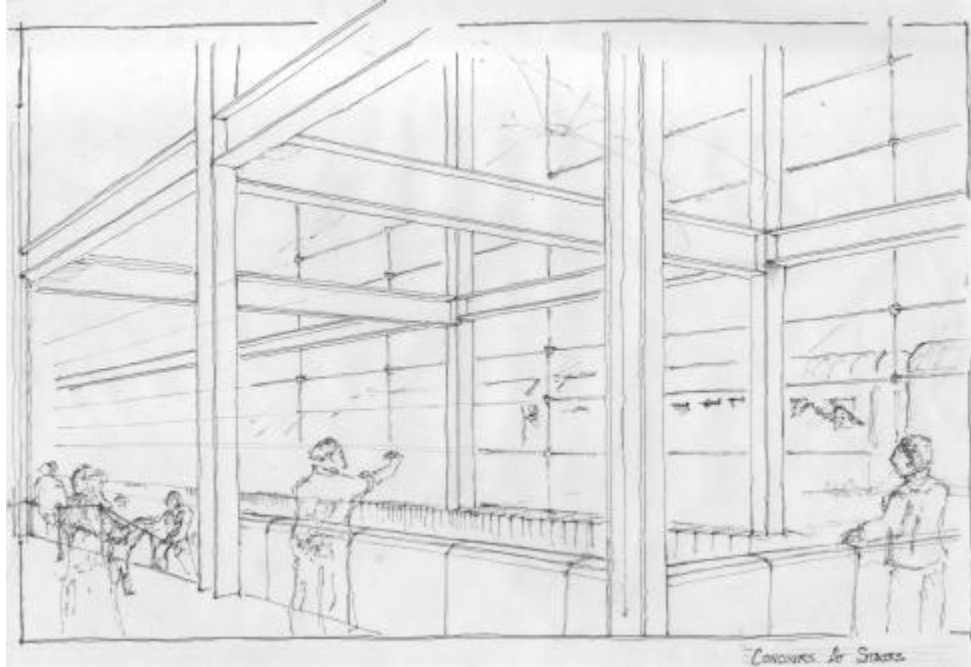
**Figure 72: View of Main Entry from Drop-off**



**Figure 73: View of Amtrak Waiting Area**



**Figure 74: View Toward Shops from Waiting Area**



**Figure 75: View Toward Descent from Concourse**

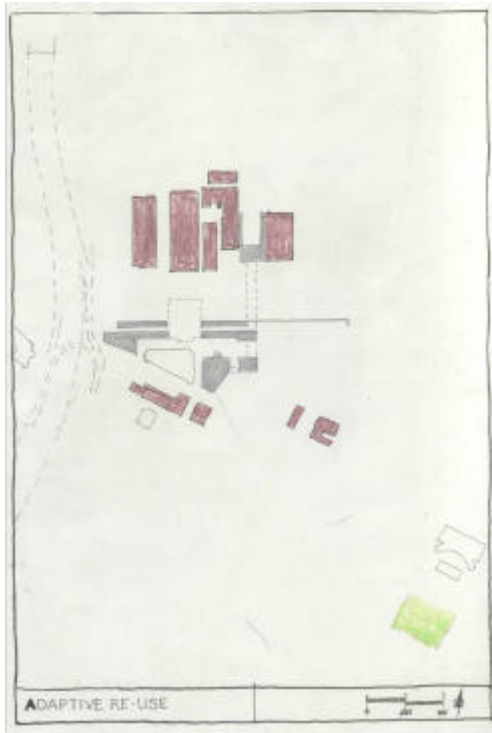
Explanatory Diagrams



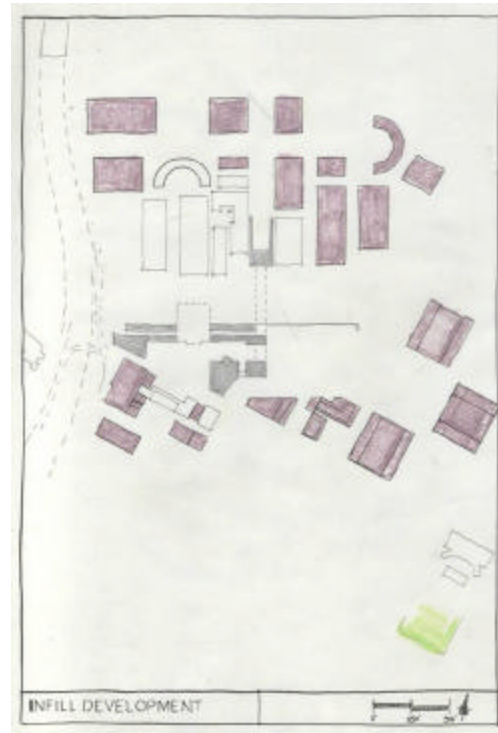
**Figure 76: Development Districts**



**Figure 77: Transit District Land Use**



**Figure 78: Preserved Structures**



**Figure 79: Transit District Infill Development**



**Figure 80: Realigned Rail ROW**



**Figure 81: UP and Amtrak ROW at Site**





**Figure 82: New Street Infrastructure**



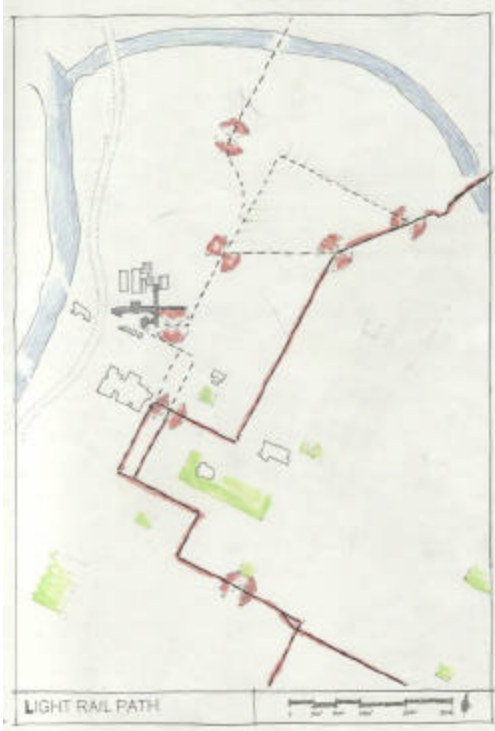
**Figure 83: New Street Infrastructure at Site**



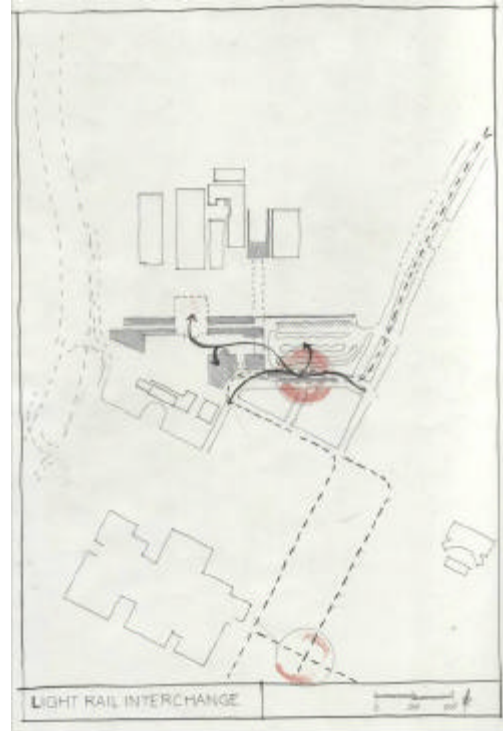
**Figure 84: Intercity Bus Route to Station**



**Figure 85: Intercity Bus Route at Station**



**Figure 86: Proposed Light Rail Extensions**



**Figure 87: Proposed Light Rail Interchange**



**Figure 88: Projected RT Bus Main Lines**

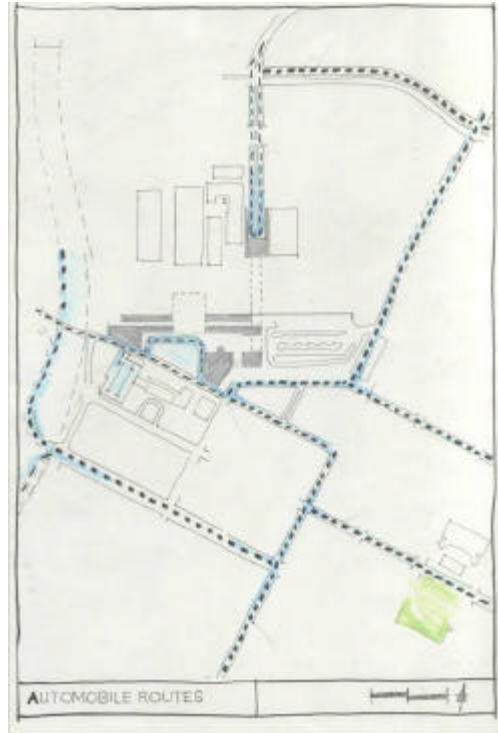


**Figure 89: Proposed RT Bus Interchange**





**Figure 90: Proposed Primary Approach by Car**



**Figure 91: Proposed Arrival at Station by Car**



**Figure 92: Proposed Open Space Intervention**



**Figure 93: Proposed Open Space at Station**



**Figure 94: Proposed Pedestrian Corridors**



**Figure 95: Promenade through Station Area**

## Chapter 8: Conclusion

Coming to a viable solution to the problems laid out in this project was, as noted from the very beginning, an issue of scale. At the urban level, the solution needed to mediate between the fine grid of the mature downtown fabric and the mega block infrastructure of the North End in order to create viable north south connections to the site and the river. However, while the downtown has the ability to utilize a one-way couplet network, the limited ability to connect into that system, and the inability to have a homogenous grid in the North End, precludes a direct translation of that system into the Railyards and further into the RBA. Evident in Figure 62 above, the couplet is reinterpreted in the 7<sup>th</sup>-5<sup>th</sup> Street pair to create a quasi boulevard condition that creates a grand cross-axis with the extension of what was the diagonal arm of 12<sup>th</sup> Street. This gesture collects and focuses all the types of traffic into and out of the city. Seen in the diagrams above, this cross-axis is used for vehicular, pedestrian and light rail traffic. A second level of primary corridors was created in the extension of the 15<sup>th</sup>-16<sup>th</sup> Street couplet into the North End and the creation of the Richards Boulevard-Bannon St. Couplet that crosses east-west.

This gesture resulted in the larger parcels north of Richards Boulevard remaining mostly intact for what can be larger more comprehensive development along the American River, similar to what is occurring at the Capital Station site, while creating a finer grain fabric toward the south, closer to the downtown that can begin to accommodate more spontaneous infill and reuse projects. So what the new network begins to do is create a few clear, primary points of access along with

specific secondary routes, while also beginning to inform the types of development that will be most likely occur in the various areas. This is how it is possible to begin to create the development districts shown in Figure 76.

The park and pedestrian corridor intervention is an attempt to prevent potentially undesirable neighbors from inhibiting growth, as well as to gesture towards an intra-city connection between the two rivers. East of 7<sup>th</sup> Street, the park buffers the railroad easement, from new development, while also connecting into the local park system at 16<sup>th</sup> Street. More importantly, however, the park primarily occupies the remainder of the Railyards site, and it does so for two reasons. One is to use the park to naturally remediate the contamination. The second is create an inland waterfront that has the ability to inflate property values at the center of the site. With a way to increase property values inland from the American River, it becomes possible to draw more investment into the center of the area that might otherwise seek Riverfront property or leave the downtown for less expensive space outside the city. So while generally, the desire is to create strong north south connections, there is a compelling economic reason to create an east-west spine in the form of a park instead. This corrects the current condition of entering the city from the regional trail system only from the periphery (either east of 16<sup>th</sup> Street or west in Old Sac. Having the Boulevard and the Park system allows trail users to penetrate deeper into the downtown before they are obliged to begin moving along more traditional vehicular corridors. This penetration into the Railyards also allows the system to be continuous

to the transit facility which then becomes a threshold into the downtown for pedestrian traffic.

At the district and architectural level the intervention becomes more specific. The ramps are relocated as per the diagram earlier in order to open access to the Historic Depot. Unlike the current proposal by the city, this project accepts that the depot has a place where it stands and can accept a new and tangent function to the new facility without being moved or attached to it. Rather the new facility becomes a completely separate piece, taking the form of a liner surrounding the north east edges of a new public plaza that fronts the station. This new sequence of plazas and buildings links the three structures [depot, transit facility, and erecting shop] without mandating that they assimilate into a different order unnecessarily. They are allowed to stand independently while creating views and shaping the urban plaza. As can be seen through the plans and section above as well as the perspective views in Figure 73-75 there is the creation of a promenade as one passes from the new square fronting the depot, through the depot's hall into the public plaza and into the main entry, where the trussed ceiling opens up to wall of glass yielding a view directly towards the renovated south face of the Erecting Shop. Or as one climbs the grand plaza stair and then passes along the bridge through the north wall of the transit facility the panorama of the shops is opened up to view. It creates an intensity of creating new views that allow each of these monumental and significant structures [new or old] to be seen in ways that bring them together through the experience, but allow them to remain independent in some way regal.

Regarding the intermodal concerns, the station plaza is zoned into three sections: An automobile drop-off, a pedestrian piazza, and a transit plaza. The Greyhound, RT Bus and light rail are separated from the pedestrian piazza by the bridge that wraps around the latter and slides above and between the two. The bridge then acts as a threshold between the movement and overlap of the modal interchange and the more understandable and tactile activity that occurs in the public plaza with its cafes, restaurants and small shops.

Inside the building the central concourse which extends the length of the structure allows for clear and efficient passage between the busses or light rail and the trains. This ease of access is again expressed architecturally in the glazed north wall of the waiting hall that allows passengers to see trains enter the shed, or watch as a friend or guest arrives or departs. The descent to the tunnel passage to reach the platforms occurs directly below this wall, so it is possible to walk toward and see the destination without being redirected in a direction that does not correspond.

Concluding, this project is an attempt to balance growth and development through the initiation of clear and legible urban circulation systems and a plurality of scales. Each scale has its own demands and expectations, but they all rely on the creation of identifiable places and the communication between these places, whether between two modes such as Amtrak and the light rail or being able to navigate from a park at the south of the city to a trail head at the north. The success of the proposal will come from its ability to mediate and resolve the issues of circulation at the scales which are most appropriate, not necessarily the most convenient.

## Appendices

### Appendix 1: Operator Requested Program<sup>y</sup>

<b>Union Pacific Freight Rail</b>			<b>224,000SQF</b>
3 Freight lines [15' O.C.]	@ 30' x 2800'	84,000SQF	
2 Edge clearings	@ 25' x 2800'	140,000SQF	
<b>Amtrak Passenger Rail</b>			<b>154,000 SQF</b>
2 platforms	@ 30' x 1400'	84,000 SQF	
4 track lines	@ 12.5' x 1400'	70,000 SQF	
<b>Inter-City Bus</b>			<b>34,320 SQF</b>
Amtrak (12 bays)	@ 60'x 22' on 45°	15,840 SQF	
Greyhound (14 bays)	@ 60'x 22' on 45°	18,480 SQF	
<b>RT [Municipal Bus]</b>			<b>43,236 SQF</b>
Standard (10 bays)	@ 43'x 73'	31,390 SQF	
Articulated (2 bays)	@ 34'x 88'	7,568 SQF	
<b>RT [Municipal Bus] Cont.</b>			
Standard Other (2 bays)	@ 43'x 73'	6,278 SQF	
<b>Light Rail: W/O DNA Busses</b>			<b>24,480 SQF</b>
2 side platforms	@ 10'x 360'	7,200 SQF	

<sup>y</sup> City of Sacramento [WP#8], chapter 5

2 Tracks	@ 12'x 360'	8,640 SQF	
2 Layover Tracks	@ 12'x 360'	8,640 SQF	
<b>Light Rail: W/ DNA Busses</b>			<b>32,048 SQF</b>
Light Rail: W/O		24,480 SQF	
Articulated (2 bays)	@ 43'x 88'	7,568 SQF	
<b>Pick-Up / Drop-Off Area</b>			<b>14,400 SQF</b>
Private		8,800 SQF	
Amtrak (6 spaces)		4,800	
Greyhound (spaces)		4,000	
Taxi Curb		5,600 SQF	
Amtrak (6 spaces)		4,800	
Greyhound (spaces)		800	
<b>Parking Requirements</b>			<b>359,450 SQF</b>
Amtrak (1000 spaces)	@ 350 SQF/space	350,000 SQF	
Greyhound (spaces)	@ 350 SQF/space	9,450 SQF	
<b>TOTAL OPERATOR REQUESTED PROGRAM:</b>			<b>910,456 SQF</b>



*Appendix 2: Modal Operator Requested Space for Passenger Services<sup>y</sup>*

PROGRAMATIC ELEMENT			Square Feet
<b>Ticketing [Ticket counters and cueing]</b>			<b>2,660</b>
Amtrak		1,780 SQF	
Greyhound		880 SQF	
<b>Baggage [Baggage and package areas]</b>			<b>6,250</b>
Amtrak		5,360 SQF	
Greyhound		890 SQF	
<b>Waiting:</b>			<b>18,120</b>
Amtrak		13,400 SQF	
550 pas * 20 SQF/ person	11,000		
300 pas * 8 SQF/ person	2,400		
Greyhound		4,720 SQF	
<b>Passenger Amenities [Restrooms, Telephone, Car Rental, etc]</b>			<b>10,690</b>
Amtrak		4,620 SQF	
Greyhound		5,970 SQF	
RT		100 SQF	
<b>Administration and Employee</b>			<b>16,850</b>
Amtrak		12,550 SQF	
Greyhound		3,800 SQF	
RT		500 SQF	
<b>PROGRAM SUB TOTAL</b>			<b>54,570</b>

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